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```
1 CCGCAACCCC GACGGCGCCC CAAACGCTGT TGCGCCGCGC GCCCCGCCCC
51 GCCCGGCCTC GCGCTGGTCC CGGTCTCGCC CCGCAGCCCT CGATCTCCCG
101 TGACTTCCTC GGCCAGGCCG CCTGCGCCTC TGGGACCATG TTGCGCTGGC
151 TGCGGGGACTT CGCGCTGCCC ACCGCGGCCT GCCAGGACGC GGAGCAGCCG
201 ACGCGCTACG AGACCCTCTT CCAGGCACTG GACCGCAATG GGGACGGAGT
251 GGTGGACATC GGCGAGCTGC AGGAGGGGCT CAGGAACCTG GGCATCCCTC
301 TGGGCCAGGA CGCCGAGGAG AAAATTTTGA CTACTGGAGA TGTCAACAAA
351 GATGGGAAGC TGGATTTTGA AGAATTTATG AAGTACCTTA AAGACCATGA
401 GAAGAAAATG AAATTGGCAT TTAAGAGTTT AGACAAAAAT AATGATGGAA
451 AAATTGAGGC TTCAGAAATT GTCCAGTCTC TCCAGACACT GGGTCTGACT
501 ATTTCTGAAC AACAAGCAGA GTTGATTCTT CAAAGCATTG ATGTTGATGG
551 GACAATGACA GTGGACTGGA ATGAATGGAG AGACTACTTC TTATTTAATC
601 CTGTTACAGA CATTGAGGAA ATTATCCGTT TCTGGAAACA TTCTACAGGA
651 ATTGACATAG GGGATAGCTT AACTATTCCA GATGAATTCA CGGAAGACGA
701 AAAAAAATCC GGCAATGGT GGAGGCAGCT TTTGGCAGGA GGCATTGCTG
751 GTGCTGTCTC TCGAACAGC ACTGCCCCTT TGGACCGTCT GAAAATCATG
801 ATGCAGGTTT ACGGTTCAAA ATCAGACAAA ATGAACATAT TTGGTGGCTT
851 TCGACAGATG GTAAAAGAAG GAGGTATCCG CTCGCTTTGG AGGGGAAATG
901 GTACAAACGT CATCAAAATT GCTCCTGAGA CAGCTGTAA ATTCTGGGCA
951 TATGAACAGT ACAAGAAGT ACTTACTGAA GAAGGACAAA AAATAGGAAC
1001 ATTTGAGAGA TTTATTTCTG GTTCCATGGC TGGAGCAACT GCACAGACTT
1051 TTATATATCC AATGGAGGTT ATGAAAACCA GGCTGGCTGT AGGCAAACT
1101 GGGCAGTACT CTGGAATATA TGATTGTGCC AAGAAGATTT TGAAACATGA
1151 AGGCTTGGGA GCTTTTTTACA AAGGCTATGT TCCCAATTTA TTAGGTATCA
1201 TACCTTATGC AGGCATAGAT CTTGCTGTGT ATGAGCTCTT GAAGTCCTAT
1251 TGGCTGGATA ATTTTGCAA AGATTCTGTA AACCTTGAG TCATGGTGT
1301 GCTGGGATGC GGTGCCTTAT CCAGCACCTG TGGTCAGCTG GCCAGTACC
1351 CATTGGCTTT TGTGAGAACT CGCATGCAGG CTCAAGCCAT GTTAGAAGGT
1401 TCCCCACAGC TGAATATGGT TGGCCTCTTT CGACGAATTA TTTCCAAAGA
1451 AGGAATACCA GGACTTTTACA GAGGCATCAC CCAAACCTTC ATGAAGGTGC
1501 TCCCTGCTGT AGGCATCAGT TATGTGGTTT ATGAAAATAT GAAGCAAAC
1551 TTAGGAGTAA CCCAGAAATG ATGTTGCATT TTTTGCTTTA GCCTGATAAT
1601 TGAAACTTTC AACAATCTCT GGAGTGACTT TTTCTCCTCG AATTGAAACA
1651 AGTCTATGGC AAAAGAAGCT GCATTTTTTT CACAAAAGGG AAGACGGTAA
1701 CAATGGTCAC TTCAAACCTT TGGGCTAAAT TATATGTACA CAGAAATGTT
1751 CAAAATCATA GTTTTAAATG GTTTTGAAAA GGCCACACAA TTATACTTTA
1801 TCTTTTCTTA ATAATCCTGC AAATCTCTGC CCTGAATCCG AAATCTGAAA
1851 ATGTAAGTGC TTGAACAAAA TTTGTTTTGT GTGTTAGAGT TATAAATCAT
1901 TAATCTTTAT TTCGGGTGGT TTACGTTTAT GCCAGTTCCT TTATATTTAA
1951 ATTTCTTGTT TTATATATTT TGAATGTCTT TATAGATTTT TTTAAATTTT
2001 CTTATAGAAC CATTAAATGA AAATCATTAC ATTTAAAATA TACCTTACAG
2051 CAAAAGCATC CAAATAAGTA TAGGGTTTAT GTCCTTATTT TTCTTTCAGC
2101 TGAATACGAA TGAACACAGT GGTGGAATTT CTGAAGGGAA GTGATGAAAT
2151 TATATTTATT TCAGTGGGCA CTTTTCCATT TTACCACTGT ACCATTATTT
2201 GGTTCCTGGA GTTATACACT AATTTTCAGT ATATTACTGT TAAATTACCA
2251 ACACAAGGCA ATTTATTTGA AAGATTCCGT TTATCCTGCC ATTGCTTTGA
2301 AAAGCAGCAG GAAACGAAAT TTTTTGACTT GTATCAGCTT CTGCAGAGCA
2351 TCTTTGTTTT CCTTTGTCCT TTGTTTCCTA CCTTTTGAAT CAGATTCCGT
2401 TTTAGTCAGG AAGACTTCTT GGGACCATTC TTAGTAACCT GAAATTTCTT
2451 TTTTAATTGC ATGAAGTGGA TTGATCATGA GCAAGTGATG GGCTTTATTT
2501 CTCCTCACT GGGAATATC CTTTGAACCT GCTGTTTGCA ATATGGGCAG
2551 CCACAAAGGG AGAGAGATGC CTATTAAATC GCGGGGGTGT ATGACTTCTG
2601 AAAACATTGG ATACCCTATT TTGAAAAGGG AAAGGCCCAA TTTGGGGAAA
2651 CATATACCAA TGCATGATTT CTG (SEQ ID NO:1)
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FIGURE 1A



Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

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FEATURES:

5'UTR: 1-137
Start Codon: 138
Stop Codon: 1569
3'UTR: 1572

HOMOLOGOUS PROTEINS:

Top BLAST Hits:

| | Score | E |
|--|-------|-------|
| CRA 335001098641184 /altid=gi 11360341 /def=pir T50686 peroxis... | 927 | 0.0 |
| CRA 11000479457833 /altid=gi 6841066 /def=gb AAF28888.1 AF12330... | 834 | 0.0 |
| CRA 18000005183605 /altid=gi 7504235 /def=pir T22688 hypotheti... | 432 | e-120 |
| CRA 1000682325160 /altid=gi 7499323 /def=pir T21074 hypothetic... | 377 | e-103 |
| CRA 89000000196990 /altid=gi 7294582 /def=gb AAF49922.1 (AE003... | 348 | 9e-95 |
| CRA 150000075553401 /altid=gi 9758252 /def=dbj BAB08751.1 (AB0... | 339 | 5e-92 |
| CRA 335001098657884 /altid=gi 11358611 /def=pir T49871 peroxis... | 330 | 2e-89 |
| CRA 163000046661776 /altid=gi 10176874 /def=dbj BAB10081.1 (AB... | 326 | 4e-88 |
| CRA 105000014652720 /altid=gi 10798831 /def=dbj BAB16462.1 (AP... | 200 | 3e-50 |
| CRA 335001098655048 /altid=gi 11277065 /def=pir T47703 Ca-depe... | 199 | 6e-50 |

BLAST dbEST hits:

| | | |
|---|------|-------|
| gi 10145202 /dataset=dbest /taxon=96... | 1108 | 0.0 |
| gi 1437155 /dataset=dbest /taxon=9606 ... | 801 | 0.0 |
| gi 10333851 /dataset=dbest /taxon=96... | 745 | 0.0 |
| gi 8469752 /dataset=dbest /taxon=960... | 363 | 8e-98 |
| gi 11684041 /dataset=dbest /taxon=96... | 307 | 4e-81 |

EXPRESSION INFORMATION FOR MODULATORY USE:

Library source:

Expression information from BLAST dbEST hits:

gi|10145202 Placenta Choriocarcinoma
gi|1437155 Retina
gi|10333851 Uterus leiomyosarcoma
gi|8469752 Breast
gi|11684041 Ovary fibrotheoma

Expression information from PCR-based tissue screening panels:

Leukocyte



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1 MLRWLRDFAL PTAACQDAEQ PTRYETLFQA LDRNGDGWVD IGELQEGLRN
51 LGIPLGQDAE EKIFTTGDVN KDGKLDFEFF MKYLDHEKK MKLAFKSLDK
101 NNDGKIEASE IVQSLQTLGL TISEQQAELI LQSIDVDGTM TVDWNWRDY
151 FLFNPVTDIE EIIRFWKHST GIDIGDSLTI PDEFTDEKK SGQWWRQLLA
201 GGIAGAVSRT STAPLDRDKI MMQVHGSKSD KMNIFGGFRQ MVKEGGIRSL
251 WRGNGTNVIK IAPETAVKFW AYEYKLLT EEGQKIGTFE RFISGSMAGA
301 TAQTFIYPME VMKTRLAVGK TGQYSGIYDC AKKILKHEGL GAFYKGYVPN
351 LLGIIPYAGI DLAVYELLKS YWLDNFAKDS VNPQVMVLLG CGALSSTCGQ
401 LASYPALVR TRMQAQAMLE GSPQLNMVGL FRRIISKEGI PGLYRGITPN
451 FMKVLPAVGI SYVVYENMKQ TLGVTQK (SEQ ID NO:2)

FEATURES:

Functional domains and key regions:

[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

254-257 NGTN (SEQ ID NO:7)

[2] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 2

1 229-231 SDK
2 475-477 TQK

[3] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

Number of matches: 8

1 22-25 TRYE (SEQ ID NO:8)
2 65-68 TTGD (SEQ ID NO:9)
3 121-124 TISE (SEQ ID NO:10)
4 157-160 TDIE (SEQ ID NO:11)
5 170-173 TGID (SEQ ID NO:12)
6 179-182 TIPD (SEQ ID NO:13)
7 185-188 TEDE (SEQ ID NO:14)
8 227-230 SKSD (SEQ ID NO:15)

[4] PDOC00008 PS00008 MYRISTYL
N-myristoylation site

Number of matches: 16

1 52-57 GIPLGQ (SEQ ID NO:16)
2 119-124 GLTISE (SEQ ID NO:17)
3 171-176 GIDIGD (SEQ ID NO:18)
4 201-206 GGIAGA (SEQ ID NO:19)
5 202-207 GIAGAV (SEQ ID NO:20)
6 245-250 GGIRSL (SEQ ID NO:21)
7 253-258 GNGTNV (SEQ ID NO:22)
8 283-288 GQKIGT (SEQ ID NO:23)
9 295-300 GSMAGA (SEQ ID NO:24)
10 322-327 GQYSGI (SEQ ID NO:25)
11 326-331 GIYDCA (SEQ ID NO:26)
12 359-364 GIDLAV (SEQ ID NO:27)
13 392-397 GALSSST (SEQ ID NO:28)
14 399-404 QGLASY (SEQ ID NO:29)

FIGURE 2A



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15 442-447 GLYRGI (SEQ ID NO:30)
16 446-451 GITPNF (SEQ ID NO:31)

[5] PDOC00018 PS00018 EF_HAND
EF-hand calcium-binding domain

Number of matches: 3

1 32-44 DRNGDGVDIGEL (SEQ ID NO:32)
2 68-80 DVNKDGKLDFFEF (SEQ ID NO:33)
3 99-111 DKNNDGKIEASEI (SEQ ID NO:34)

Membrane spanning structure and domains:

| Helix | Begin | End | Score | Certainty |
|-------|-------|-----|-------|-----------|
| 1 | 292 | 312 | 1.053 | Certain |
| 2 | 345 | 365 | 0.613 | Putative |
| 3 | 381 | 401 | 1.544 | Certain |
| 4 | 446 | 466 | 0.733 | Putative |

BLAST Alignment to Top Hit:

>CRA|335001098641184 /altid=gi|11360341 /def=pir||T50686 peroxisomal
Ca-dependent solute carrier [imported] - rabbit
/org=rabbit /taxon=9986 /dataset=nraa /length=475
Length = 475

Score = 927 bits (2371), Expect = 0.0

Identities = 454/477 (95%), Positives = 466/477 (97%), Gaps = 2/477 (0%)

Query: 1 MLRWLRDFALPTAACQDAEQPTRYETL FQALDRNGDGWVDIGELQEGLRN LGIPLGQDAE 60
MLRWLR F LPTAACQ AE PTRYETL FQALDRNGDGWVDI ELQEGL++ LGIPLGQDAE
Sbjct: 1 MLRWLRGFVLPTAACQGAEPTRYETL FQALDRNGDGWDIRELQEGLKSLGIPLGQDAE 60

Query: 61 EKIFTTGDVNKDGKLDFFEFMKYLDHEKKMKLAFKSLDKNNDGKIEASEIVQSLQTLGL 120
EKIFTTGDVNKDGKLDFFEFMKYLDHEKKMKLAFKSLDKNNDGKIEASEIVQSLQTLGL
Sbjct: 61 EKIFTTGDVNKDGKLDFFEFMKYLDHEKKMKLAFKSLDKNNDGKIEASEIVQSLQTLGL 120

Query: 121 TISEQQAELILQSIDVDGTM TVDWNWRDYFLFNPVTDIEEIRFWKHSTGIDIGDSLTI 180
TISEQQAELILQSID DGTMTVDWNWRDYFLFNPV DIEEIRFWKHSTGIDIGDSLTI
Sbjct: 121 TISEQQAELILQSIDADGTM TVDWNWRDYFLFNPVADIEEIRFWKHSTGIDIGDSLTI 180

Query: 181 PDEFTDEKKSGQWWRQLLAGGIAGAVSRTSTAPLDR LKIMMVHSGSKSDKMNI FGGFRQ 240
PDEFT E+E+KSGQWWRQLLAGGIAGAVSRTSTAPLDR LK+MMVHSGSKS MNIFGGFRQ
Sbjct: 181 PDEFT EERKSGQWWRQLLAGGIAGAVSRTSTAPLDR LKMMVHSGSKS--MNIFGGFRQ 238

Query: 241 M+KEGGIRSLWRGNGTNV I K IAPETAVKFWAYEQYKLL TEEGQKIGTFERFISGSMAGA 300
M+KEGG+RSLWRGNGTNV I K IAPETAVKFW YEYKLL TEEGQKIGTFERFISGSMAGA
Sbjct: 239 MIKEGGVRSLWRGNGTNV I K IAPETAVKFWYEQYKLL TEEGQKIGTFERFISGSMAGA 298

Query: 301 TAQTFIYPMEVMKTRLAVGKTGQYSGIYDCAKKILKHEGLGAFYKGYVPNLLGIIPYAGI 360
TAQTFIYPMEVMKTRLAVGKTGQYSGIYDCAKKILK+EG GAFYKGYVPNLLGIIPYAGI
Sbjct: 299 TAQTFIYPMEVMKTRLAVGKTGQYSGIYDCAKKILKYEGFGAFYKGYVPNLLGIIPYAGI 358

Query: 361 DLAVYELLKSYWLDNFAKDSVNP GVMVLLGCGALSSTCGQLASYPLALVRTRMQAAMLE 420
DLAVYELLKS+WLDNFAKDSVNP G V+VLLGCGALSSTCGQLASYPLALVRTRMQAAMLE
Sbjct: 359 DLAVYELLKSHWLDNFAKDSVNP GVLVLLGCGALSSTCGQLASYPLALVRTRMQAAMLE 418

FIGURE 2B



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Query: 421 GSPQLNMVGLFRRIISKEGIPGLYRGITPNFMKVLPAVGISYVYENMKQTLGVTQK 477 (residues 1-477 of SEQ ID NO:2)
G+PQLNMVGLFRRIISKEG+PGLYRGITPNFMKVLPAVGISYVYENMKQTLGVTQK
Sbjct: 419 GAPQLNMVGLFRRIISKEGLPGLYRGITPNFMKVLPAVGISYVYENMKQTLGVTQK 475
(SEQ ID NO:4)

>CRA|11000479457833 /altid=gi|6841066 /def=gb|AAF28888.1|AF123303_1
(AF123303) calcium-binding transporter [Homo sapiens]
/org=Homo sapiens /taxon=9606 /dataset=nraa /length=411
Length = 411

Score = 834 bits (2132), Expect = 0.0
Identities = 409/410 (99%), Positives = 409/410 (99%)

Query: 8 FALPTAACQDAEQPTRYETLFAQALDRNGDGVVDIGELQEGLRNLGIPLGQDAEEKIFTTG 67
F LPTAACQDAEQPTRYETLFAQALDRNGDGVVDIGELQEGLRNLGIPLGQDAEEKIFTTG
Sbjct: 1 FVLPTAACQDAEQPTRYETLFAQALDRNGDGVVDIGELQEGLRNLGIPLGQDAEEKIFTTG 60

Query: 68 DVNKGKLDFFEFMKYLDHEKKMKLAFKSLDKNNDGKIEASEIVQSLQTLGLTISEQQA 127
DVNKGKLDFFEFMKYLDHEKKMKLAFKSLDKNNDGKIEASEIVQSLQTLGLTISEQQA
Sbjct: 61 DVNKGKLDFFEFMKYLDHEKKMKLAFKSLDKNNDGKIEASEIVQSLQTLGLTISEQQA 120

Query: 128 ELILQSIDVDGTMVDWNEWRDYFLFNPVTDIEEIIIRFWKHSTGIDIGDSLTIPTDEFTD 187
ELILQSIDVDGTMVDWNEWRDYFLFNPVTDIEEIIIRFWKHSTGIDIGDSLTIPTDEFTD
Sbjct: 121 ELILQSIDVDGTMVDWNEWRDYFLFNPVTDIEEIIIRFWKHSTGIDIGDSLTIPTDEFTD 180

Query: 188 EKKSQWWRQLLAGGIAGAVSRTSTAPLDRLKIMMQVHGSKSDKMNIFFGGFRQMVKEGGI 247
EKKSQWWRQLLAGGIAGAVSRTSTAPLDRLKIMMQVHGSKSDKMNIFFGGFRQMVKEGGI
Sbjct: 181 EKKSQWWRQLLAGGIAGAVSRTSTAPLDRLKIMMQVHGSKSDKMNIFFGGFRQMVKEGGI 240

Query: 248 RSLWRGNGTNVIKIAPETAVKFWAYEQYKLLTEEGQKIGTFERFISGSMAGATAQTFTIY 307
RSLWRGNGTNVIKIAPETAVKFWAYEQYKLLTEEGQKIGTFERFISGSMAGATAQTFTIY
Sbjct: 241 RSLWRGNGTNVIKIAPETAVKFWAYEQYKLLTEEGQKIGTFERFISGSMAGATAQTFTIY 300

Query: 308 PMEVMKTRLAVGKTGQYSGIYDCAKKILKHEGLGAFYKGYVNNLLGIIPYAGIDLAVYEL 367
PMEVMKTRLAVGKTGQYSGIYDCAKKILKHEGLGAFYKGYVNNLLGIIPYAGIDLAVYEL
Sbjct: 301 PMEVMKTRLAVGKTGQYSGIYDCAKKILKHEGLGAFYKGYVNNLLGIIPYAGIDLAVYEL 360

Query: 368 LKSYWLDNFAKDSVNPVGMVLLGCGALSSTCGQLASYPLALVRTRMQAQA 417 (residues 8-417 of SEQ ID NO:2)
LKSYWLDNFAKDSVNPVGMVLLGCGALSSTCGQLASYPLALVRTRMQAQA
Sbjct: 361 LKSYWLDNFAKDSVNPVGMVLLGCGALSSTCGQLASYPLALVRTRMQAQA 410
(SEQ ID NO:5)

Score = 80.0 bits (194), Expect = 6e-14
Identities = 80/388 (20%), Positives = 156/388 (39%), Gaps = 59/388 (15%)

Query: 95 FKSLDKNNDGKIEASEIVQSLQTLGLTISEQQAELILQSIDV--DGTMTVDWNEWRDYFL 152
F++LD+N DG ++ E+ + L+ LG+ ++ E I + DV DG +
Sbjct: 21 FQALDRNGDGVVDIGELQEGLRNLGIPLGQDAEEKIFTTGDNKDGKL----- 68

Query: 153 FNPVTDIEEIIIRFWKHSTGIDIGDSLTIPTDEFTDEKKKSQWWRQLLAGGIAGAVSRTST 212
D EE +++ K + EKK ++ L +
Sbjct: 69 -----DFEEFMKYLK-----DHEKKMKLAFKSLDKNNDGKIEASEIV 105

Query: 213 APLDRLKIMMQVHGSKSDKMNIFFGGFRQMVKEGGIRSLWRGNGTNVIKIAPETAVKFWAY 272
L L ++ ++ +I V R + N I E ++FW +
Sbjct: 106 QSLQTLGLTISEQQAELILQSIDVDGTMVDWNEWRDYFLFNPVTDI----EEIIRFWKH 161

FIGURE 2C



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Query: 273 EQYKKL-----LTEEGQKIGTFER-FISGSMAGATAQTFIYPMEVMKTRLAV-GKT 321
+ TE+ +K G + R ++G +AGA ++T P++ +K + V G
Sbjct: 162 STGIDIGDSLTIPTDEFTDEKKSGQWWRQLLAGGIAGAVSRTSTAPLDRLKIMMQVHGSK 221

Query: 322 GQYSGIYDCAKKILKHEGLGAFYKGYVPNLLGIIPYAGIDLAVYELLKSYWLDNFAKDSV 381
I+ +++K G+ + ++G N++ I P + YE K ++
Sbjct: 222 SDKMNIFFGGFRQMVKEGGIRSLWRGNGTNVIKIAPETAVKFWAYEQYKKL-----LTEEGQ 273

Query: 382 NPGVMVLLGCGALSSTCGQLASYPLALVRTRMQAQAAMLEGSPQLNMVGLFRRISKEGIP 441
G G+++ Q YP+ +++TR+ A+ + + ++I+ EG+
Sbjct: 278 KIGTFERFISGSMAGATAQTFIYPMEVMKTRL---AVGKTGQYSGIYDCAKKILKHEGLG 334

Query: 442 GLYRGITPNFMKVLPAVGISYVYENMK 469 (residues 95-469 of SEQ ID NO:2)
Y+G PN + ++P GI VYE +K
Sbjct: 335 AFYKGYVPNLLGIIPYAGIDLAVYELLK 362 (SEQ ID NO:6)

Hmmer search results (Pfam):

| Model | Description | Score | E-value | N |
|---------|--------------------------------|-------|---------|---|
| PF00153 | Mitochondrial carrier proteins | 305.4 | 3e-88 | 1 |
| PF00036 | EF hand | 50.7 | 1.7e-12 | 3 |
| PF00404 | Dockerin domain type I | 9.7 | 0.26 | 1 |
| PF01978 | Protein of unknown function | 2.7 | 9.5 | 1 |

Parsed for domains:

| Model | Domain | seq-f | seq-t | hmm-f | hmm-t | score | E-value |
|---------|--------|-------|--------|-------|-------|-------|---------|
| PF00036 | 1/3 | 27 | 51 .. | 5 | 29 .] | 18.7 | 0.002 |
| PF00404 | 1/1 | 67 | 85 .. | 1 | 22 [| 9.7 | 0.26 |
| PF00036 | 2/3 | 61 | 87 .. | 3 | 29 .] | 19.7 | 0.001 |
| PF00036 | 3/3 | 90 | 118 .. | 1 | 29 [| 17.2 | 0.0051 |
| PF01978 | 1/1 | 110 | 121 .. | 1 | 13 [. | 2.7 | 9.5 |
| PF00153 | 1/1 | 193 | 472 .. | 1 | 313 [| 305.4 | 3e-88 |

FIGURE 2D



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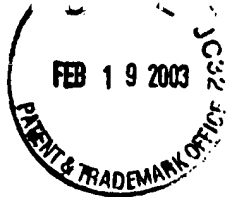
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1 AACCCATGTT AGTGTGCACT TCTGCTGGCA CACACATGCA GTTGTGTAAC
51 CACTACCACC AAAAGCAAGA TGTAATAATAG CTCCATCACC CCCACAAGCC
101 TTCTGATGCT CTTTTGTCAT CAATTCCCTT CCCGCTAGTC ACAACTGGTA
151 ACTACTGATT TGTTTTCTGT CCCTATAGTT TTGCCTTTTC CAGAATGTCA
201 TTGTTGACAG GTATCAGTAA TTCATTCCCT TTTATTGCTA ATTACTATCT
251 CACTGTATGA ATGCAACACA GGTGTTTAC CAGTTCACCC GTTAAAGAAC
301 ATTTTGTTC TGCGCTTGAC AGTTATGAAT AGAACTGCTA TAAACCCTCA
351 AGTAAAAGTT TTGGTGTGAA GATAATTTTC TCAGCAAAAA CGCTGACAGG
401 TAATTTTTCT AAGTATTACT TTTTAAAAA AGTAAAATAG CCTGTAGCCC
451 CAGCTACTCA GGAGGCTGAG GCAGGAGAAT AGCTTGAACC CAGGAGGCGG
501 AGGTTGCACT GAGTTGAGAT TGTGCCACTG CATTCCAGCC TGGGCGACAG
551 AGCTAGACTG TCTCAAAGAA AAAAAAAAAA AATAACAAAT AAATAAAAAG
601 TAAATGAAA GCATGTAAGT GTAAGATGAC TAGTTCAAGC AACCTCTCTT
651 CAAGTACAGA GTATTCAGAG TAGAGATTAA AAGAGTTTTT CAAGGACAGA
701 GAAAAATTTGA AGTTTGAAGG CAGTTCCAAA GGAAGGCAAT GATTCTTAAT
751 AAGACTGGAA GTTGGAAGTA ATATAAAAAAG ATAAATCAGT TTCAAGATGA
801 TTTTACTAAG CAGGCAGCCC TTAATTTACA AATTCTAGAT TCATACATAT
851 CTAAACATA CAAAATGATA TGAGGAGAGG TAAGTTCAGG GTCTGAGTTC
901 CTGGCTGTTG TTGGAAGTGA TTTCTGTGTA GTGATTGAGA AGATGTGAGA
951 CACCCTAATT TACAAGTACA GAGGTATCTT CTTTTCTGCA AACAGCAGTA
1001 CAACAATAGT TCCTCTTACG CAGCTGTGAA TGAACAGGAT TATTACAATT
1051 AATGATATCT CATTTGATTG GCGCCTTAGA GAATTAAGAC CTTTCACACC
1101 TAATATACAA CTTTGTGTG AAGGCAGATA TTTATATTCT CATTTTACTG
1151 ATGAGAGACT ACCCGGAGAC GCTATGTCAC ACCTGAAGGA TTAGGTAATT
1201 TCTCTGTTAA GTCCAATGTT CCTTCCGTTA TTCCATGCTA GGCAGTAATA
1251 AGTTCTGTCT TGCCTGAGTA ATAAGCTCCA AACCTCGGAA CTGCACCCAT
1301 CTTGAGAAGG AGGAGGCGC TGTGGTTTTT TCTGATAAGT GCAGCTGGCA
1351 GACACTCTAT ACGCTTAATC ACGGGCAAAT CCTACCTAAG CTGCCTACCA
1401 AACTAGTCCT TCTTTTCCCC GTTGCCACG CAGATGGCTG TTGATCTTTT
1451 CTGCAACAAA TCCAGGAGTT TCTCCTTTT GTTTTATAAT TGCTCCAATA
1501 GATGCTTTAG GATTTAACTC TCTGCTTTT AAAGCAGAAT CGCCATCCCA
1551 GGTGTGCAAC CACGAAAAAA TTAGACATCC GTGAGAGACA ATGCCCTCCA
1601 TGGCCAGTT TCCAGGCAGA GAGAAGCAGC TCTGGGCTGA CCGCCAAGGC
1651 TCCGCGCCGA GAGGGTCTTT AAGTGGAGTA ACCAGTCTTC AAGACCCCGC
1701 TCCCAAGCCA CCGACGCGCT GACGCTGCAG CCCTGGACCT GCTGGGGGCC
1751 TCTTCTCGG ACCCGCATGC TGACAGCGGG ACTGGCAACT GGGCAGAGGT
1801 CGACCCCGGG TCCGCACAGC ACCTCCCGAG ACCCAGCTCC CAGCTCCCTC
1851 ACTTCCGGCT CTCTGGAGGC GGGCCCGGCG AGTGCCGCGG AGGCCAGCGC
1901 GCGCGCTCC TCCCGAGCAG CGGCGGGACG GCCACACCCT GCGCGCCGCG
1951 CGGGCTCGGG TGGGGTCTCC GCTCCTGCGC CCTGCGCGCC GCAGCCGCAC
2001 CCCCAGCGGC GCCCAAACG CTGTTGCGCC GCGCGCCCG CCCAGCCCGG
2051 CCTCGCGCTG GTCCCGGTCT CGCCCCGAG CCCTCGATCT CCCGTGACTT
2101 CCTCGGCCAG GCCGCCTGCG CCTCTGGGAC CATGTTGCGC TGGCTGCGGG
2151 ACTTCGTGCT GCCCACCAGC GCCTGCCAGG ACGCGGAGCA GCCGACGCGC
2201 TACGAGACCC TCTTCCAGGC ACTGGACCGC AATGGGGACG GAGTGGTGGA
2251 CATCGCGGAG CTGCAGGAGG GGCTCAGGAA CCTGGGCATC CCTCTGGGCC
2301 AGGACGCCGA GGAGGTGGGT CGCCGCGGG GCGCCGCTG AGCGTAGGGA
2351 GGGCTGCGGG CGCTGGGGAC ACTGCGAGGA CCGAGGAGGG CGGCGGCTTG
2401 AGGCGTTGCC AGGAGAGGAA GGAGGAACTG TGGCGCCCAG CGCTCCGGTG
2451 GCTTCAGAAA CTCGGGCGTG GGGCCGCGAC CGGCGACCCC GGTAACAGAA
2501 GTGGGTGATA ATACGAAAGT CTAAGTGGAT TTGTCCAGAT AAAATGAGTG
2551 TTGTGACAC TCTGGCCAC GGGCACTGTT AAATTTTTAA GACACTTTTG
2601 TCCTGAATCC ATCCAGGTT CTTTGTTTTC TGTTTTAATA CCTTGCAGAC
2651 ATGTAATCCG TTTTAGCTGT CAGACTTCAG TGGGTCCCAA GTTTTGATA
2701 AAGGCGACA CATTGATCT CTTTCAAGC TGCTTTGTTA CAGCAGCTAT
2751 GTGTATTGTC TACTGTTTGA AAAGTGTG AAAACCAATC GCGTGTTC
2801 CCCACTTCCT GTTGAGAAGG AATGGCGGCA TTCCATTGTT TAAGACATTC
2851 CTAGGTAAAT GCCCTAGGTA CATAAATTGA TCTGAAGGGT TGACTTGACC
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FIGURE 3A



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2901 TGGCACTGAG CAATTTTCATT TTCTCTGAGT CATCTTAACT GTGCCCCCTGA
2951 ACTTCTGCC CTTTAGTAGG GTGGAGATAT GTGGAACCTC TCCAACCCTG
3001 TTGAAGCGTT CCCTGACACT GGCATTCTCT TATCCAAAGA GGGAAAGTGA
3051 TTAGGTTACT ATGAGGGCCA ACAACTGTTA TATAGTTATA TTTCACCTCT
3101 CTTTTAATGT CTTTGGTAGT TATAGGCCTC TTCAGTTTAC TGTTTCTTCT
3151 AGAGTCAGAT TTAGTAAGTT ACAATTTTTT TTGAAACTGC CTGTTCTGTC
3201 CAAGGTTTCA AATACTCACC GATGATTTTA TAACACTTCT GACTGAATCT
3251 GTAGGTAGGT TCTCTATTTT ATTCTCATA TCTATCCTTT TCTCCCCCTC
3301 AATCTTGCCA AAGTTTTGTG TATTTTATTC ATACTTTGAA GGAACCAACT
3351 TTTGGTACTT TGTGCTGATT GTCCAGAAA TGGCCAGTT GGAGTTCCCC
3401 ACCATGTCCA ATCATTGGCT GGAAGCAGCC CAGGAAAGGG ACGACCTTGC
3451 TGCAGTGCAT CAGCAGATGC CAGGGTTAGA GGCTAGAGAG TGGAAGTCAA
3501 CTGTGTTCTT CACAGTAGGT GCCTTTGAAG GGAGATCTCA GTGGTACAAC
3551 TCCATGGTCC CTACAATATA CAAAAGCTCT TTGGAGTGCT CAATGATTTT
3601 TAAGATTGTA AAGGGATCCT GAGATCAAAA AGCTTGAGAA TTGCTGCTGT
3651 ATCACCATTT TTACGTAAC GCATCATATT CTGTTATATG TTTGTGTCAT
3701 AGTATATGTT ACCAATTCTT TTTAAATCAC CTTTACTTT ATTGATAGTT
3751 TAAAAACGAT TGTAAGTGAA ATTGCAATGG ATGTCCTTTG TATTCATTTT
3801 CTCATTCTGG TCCAGTTACT TTCGTAGGAT AAATTTTGAG GAGTGGACAT
3851 TGCTGAGTCT GAAGGTAACA CACATTTTAA ACTGGGATAC GTATTGCCTT
3901 TCGGAAACCT TAGACCCATT TTCACTCTTT TGACTGACAG TGCTTGCTTC
3951 TCCACATCCT CGCTCATTCA GGGTATCAGT CTTTGTAAAG TCTCCTATTC
4001 TGCAGGTGAA ATTCCTTTTC ATTTCTGTC TTAGTCCATT TAGTGTGCT
4051 ATAGTGGAAT ATCTGAGACA GGGTAATTTA TAAAGAAAAG ACATTTATTT
4101 AGCTCACAGT TCCGCAGGCT GGGAAAGTTA AGAAGCGTGG TGCTGGCATC
4151 TGCTGGACTC TTGGGGAGGG CTTTCTGCT GTGTCACAAC ATGGTGGAAG
4201 GTCAAAGTGG AAGTGGACAT GTGTGAAGAA GCAAAATCCG AGGGGTGTCC
4251 TGGCTTTATA GCAACCCAGC CTCGAGGGAA CTGATCCATT ACTGAGGGAA
4301 CTAATTCAGT CTCATGAGAG AGAGAACTCA CTCACTACTG CAAGAATGAC
4351 ACCAAGCCAT TCATGAGGGA TCTGCCTCCG TAACCCTGAC ACCTCCTGCT
4401 AGGTCCCTCC TCCCAACACG GCCACATCAG GGATCAGACT TCAACATGAG
4451 TTTTTGTGGG GACAAACAAA ACGTAGCACT TGCTTTGCCT TTTGGTTCTA
4501 TTCACATCCT CCACAGGATT GCATTATGCC TACCCATTTG GTGAGGGCAG
4551 TCTTCTTTAA TTGGTTTACT GATTCAAATG CTACCCCTCT CCAGAGACAT
4601 CCTCACAGAC ACACCCAGAA ATCATGTTTT ACCAGTTATC TGGGCATCCC
4651 TTAGTCCAGA CGAGTTGATA CATAAAATTA ACCATCACAC ATGGGATAGA
4701 ATTAGGATTA CACAGTCAAC CTTTATGGGA GAAAATTTCA GAGGCATGTC
4751 AGGGGTTTAT GTAATGTCAA GGAGTGAGGA CATTGGCTAC TTGAGCATAG
4801 AAATGAGAAC TGTGGGTGA CTCTCGGTG GAAAGTTTCA AGGTAGTAGT
4851 TTGTATCTAA GCCAAATACT CAGCTTGAAG CAAAATCTCT ATAAATTTTC
4901 ATCTGATTTG ATCTCATCTC CGTGTTTCCA AGCATTTGTA ATGAATTGAG
4951 CATTTAGAAG AGAACAAAT TCTGTTTAAG TTTCTTTAGA TTTTAGATGG
5001 AAAGAATGTA GAAATAAGAG TAGAATGTAG AAATAGGTAT AAAGAATATA
5051 ATAGCTAACC ATTACTAAGT GTTCCAGAAT TATCCAGGGA AGAGAAAAGA
5101 ATTCAAGGCA AGTCCTGAGA CAAAATTAAG AACCAATTGG AAGTGAAAGC
5151 GCTACATTTT TTTTTTCTGG TATGACCTTT CTTTTCTATA TGTTCCAAAT
5201 CTCCTCACTA TGAAATTAGT GAAAAATTAA AGTTAAAAAT TAGAGAAAAT
5251 TCACATTAAG TTCTCCTAGG ACTCAGTAGT ATAAGGGTAT AGACTGAGAG
5301 TAGAATGTAG TGTGAGAACA AGGAGATACA GTATTTAACC ATTACTAATT
5351 CTCTTACT TGTCTAGTAA TCCTATTTCC TTTTAAAAGT CTTCACTTAT
5401 TTTCTCTTTA CGCACCTCTT TCTCCCTCTT GTCTTCCTCC TTCTACCCCC
5451 ATCTTTCTTC CTGTGGAGCC TTCATGAATG GGATTAGTGC TTGTATAAAA
5501 GTGACCTGGA AGACCTTCCT TGCCCTTCC ACCATGTGAG GACACAGTGA
5551 GAAAACAGTG GTCCATGGAA CCGGAAAGTG GGTCTCACT AGACAGTAAA
5601 TCTCCTAGCA CTTGATCTA GGACTTCCAG TGTCTGGAAC TGCAAGAAAT
5651 CAATGCTTAT TGTTTAAGTA AGCCAGTAGT ATTTTGTCA TAGCAGCCCA
5701 GTTGGACTAG GACAATTACC AAGAGCAAGA AGGGAAGCAG CAAGCTACAA
5751 GAGAGTTCCG TCCTTGGTGT AAATTGACCG TGTAATCCTT GTCAAGTTTG
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FIGURE 3B



Docket No.: CL001103

Serial No.: 09/777,921

Inventors: Gennady MERKULOV et al.

Title: ISOLATED HUMAN TRANSPORTER ...

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5801 AGCCTTACTG GAGCTTTACT TTCTTATTCT TAAAATGCAG ATATCTTGCC
5851 TGCATCCTGG ACAGAGCTTT TAACAAGGTC ATATGTTGCA GAATATGAAA
5901 GTTCATGTTA AAAAACCCCTT TAAAATGTGG TATCCCATT TACTAGCTGGT
5951 GAACTTCTTG AGGAACCTCT GTGCCCATGG GTATGAAGTG TATGCTGAAT
6001 GATCACCCAA TGTTAGAGGA GTGGGTGGAC TGGTAACCTG ATTTAAGGGC
6051 CATTCTAACT CTTACATTCT ATGATTTTTT TAATTCTGTC TTTAAGTTTT
6101 TACATTTACA ATCACAGAAA AAATAGTCAC ATAGAAGAAT AGTAGCTTAG
6151 CAAATGTTTA TTGCATTGAG TGGAAATCAGG ATTTCACTCG ATTAAGTAAT
6201 TCCTCTGTTA ACAAAGAGGG TTCATTTTCAT TTTTATTTCA TTAATATTGC
6251 TTTTTTTTTT TTTTTTCTGG AGACAGAATC TTGCTCTATC ACCAAGGCTG
6301 GAGTGCAGTG GTGCGATCTC GGCTCACTGC AGCCTCTGCT TCCTGGATTG
6351 AAGCGATTCT TGTGCCTCAG CCTCCCAAGC AGCTGAGATT ACAGGCACAT
6401 GCCACCACAC CTGGTTAACT TTTGTATTTT CTAGTAGAGA TGGGATTTTG
6451 CCATGTTGGT CAGGCTGGTC TTGAATTCCT GGCCTCTAGT GATCTGCCTG
6501 CCTCTGCCTC TGAAAGTGCT AAGATTACAG GCATGAGCTA CCATGGCCAG
6551 CCCATTTTCT TAATATTTTA ATTGTCAGAG ATGTTATGGT TTCTGGCACA
6601 ATATTAAGAA GACATGATAT GAAATCACAG GGTGAATTTT AGGGCATCAC
6651 AACAGAAAAG TATGTTGATA AGAAAAACAA TGAATTTCCA ACTACATTTT
6701 TGTCAAATGT TCTAAAATAT ATAAAATCTG TATCTTTTGT GTTCTCTCCT
6751 GATTTATATT CTAAATTTGA TGTATCCTT CTCTGCAGAA ATAAAGTGTC
6801 TGAAAGAATG AAAAAAATGG AAGAATTCTT TAGTAAGGTA TAAAATACCC
6851 TTTCTATCTT TGTAGCATTG TAAGCCTTTT GTCACCTTTC CAAACTCCCA
6901 ACATGCCATA TTCCCTGACT AGGCCACAGC CATGTACATT GATCCCTTTA
6951 TTTTCTTCTC TCTGCCTGAG ATTTCTCTCA TTCCCCCTTC TCTGCCTGGT
7001 ATATGATTGC CCATTGTTTA AGGCCCAAC TCACCTTTAT AATCTTCCTA
7051 GCCCACTTTC TTTATCGGTA TTCCAGAAAA AACAAAAGAA GCTTCCACAA
7101 GACAACATTG TGTAATACAC TGCTTAACTT CTTTTGACCC TGCTGAGTTC
7151 AAAAACTTTA TCTTTTTAAG GATTGAATGG AGTCCACCAA GGTATCTATA
7201 TTTGACAGGA TTTATGAAAA CAAAAGGATT TGTGAGAAA GTTTGAAGCC
7251 TAACTCTGAA ACGTGGATCA TAGTGTTTAC TACACATTAA CTGTTTTAGT
7301 GGATGTAATA GTTATTATTA TAGGCTGTGG AATCAGAACA GGGTTCAAAT
7351 GTTTTCACCG CTTGCTAGAC TGTGGCCTTG GGCATGTTAT TTAATGCCTG
7401 GAGGCCTCAA ATGTTAACTA GGAATGGTAA GACCTACCCA GTAACCTAGC
7451 ATAAATAGTA AATTCATTCA TTTAATGTTT TCAAACAGTG CCAGACATTG
7501 TTTAATGAAC TGGGGATATA GTGGTGAACA AACTGACAG CGTTCTTCAT
7551 TGTATTCTCA AAACCCTCCC TATAGTAAGT AGGTCTGTGT GTGTGTGTAG
7601 GTGCATGGGG AATAAAAAAT AATAAGCAA TAATGAACAG GGTAATTTCA
7651 AAAAGCAGAA AGAGCTATTG AACAAAATA CCTGCCTTTT ATTAGATGAA
7701 ACTCTCAACT TCTGGTTTGT TTCTCTCCTG TCAATTCTGT TAAATGCTGT
7751 CAGCTGTGTT TCCTTATCAC CCTGGCCACG ACTTCTGTCT TTTCTGCTG
7801 GTCCTGTAGA CTCTAACCCA AGGCTCATTC TCTGCCTGGC TATCTGCCTT
7851 CTGTGGCTCT TTGCCACTAC CTACATTTTC TGTGTTGCAC AGGGAAGGAC
7901 CATTCCCTGT GGACCATAAA ATTCTCTTTT TGAAAGAATT CATTCTTGAT
7951 TGGGCCACAG CACATCTTGT GAAACAGCAT TAGACATTTG CCACTGCTCA
8001 GCAGCTCTGG GGGAAAATGT TTAAGTGAAG GCGTACAGTA GTTTTTTTGA
8051 CTAACCATGG TGCAACCTCC TCCCAGAGGG AAACCTATGA GTATTTCAAG
8101 GACATGTGAT GGTCTGTTTT TGTCCCCAGT ATCTGACATG ATGGGTAGTG
8151 TAGAGCAAGA GCTTACAGAT AATGGCTAAA TTAAATTTTC TTTTGAATT
8201 TTAATATTCA ACTTTTTAGG GTACCCAATC TCCATATTTA GGAAATAAAA
8251 TTACATAAAA AGTGGAGAGT TTTTATTGTG AAAGTGCACC TCCATATTCC
8301 CAGTGGTGCA GGATGAGGGA GCACAGGTGT TGGTCTGGGG AAGCCAGGGC
8351 CCTCTGTGGT TCTGGAGGGT GAGGATTAAG AGGAAGCCTT AGATAGTATT
8401 TATGAGTATC TGCTGACTTC TCTCTGGGAC CCAAGATCAC TGAACTTTTG
8451 CCTATTTTGA GATCATCTTT CCAATCCAGC CACTAACAGC TGAAGGATAG
8501 GCTTGCCCTG GAGCCATTGT AGTGGTTGGA TGAAGATAAA AGATAAAAAA
8551 CTGTGAGGGG AGGTGTCACA GAAGAAAGGG CCCATGTGGG CAGATTTTCA
8601 TTCAATTCCT AGTCTTTATT ACAGCAATTC TCCAGTGCTG CAACCTTAGA
8651 AAAGGATTCC TACAACACAA TGTAGGTACC CATCAGCAGC AGATTGGATA
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FIGURE 3C



Docket No.: CL001103

Serial No.: 09/777,921

Inventors: Gennady MERKULOV et al.

Title: ISOLATED HUMAN TRANSPORTER ...

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TECH CENTER 1600/2900

8701 AAGAAAATGT GGTACATACA CACCATGGAA TACTATGCAG CCATAAAAAA
8751 GGAGCAAAAT CATGTCCTTT GCAGCAATAT GAATGCAGCT GGAAGCCAAT
8801 AACTTAAACG AATTATTGTA GAAACAGAAA AACAAACTACT GTGTTCTCAT
8851 TTACAGGGGG AGCTAAACCT TGGGTAAATG GGGCATAAAG ATGGGAACAA
8901 TAGACACTAG GGACTCCAAA AGGGGGGAGG GAGGGAGGAG GGCAAGGGCT
8951 GGAAGCTTTC CTAAGGGTGA CTTTGTTCAC AACCTGGGTG ATGGCAGCAT
9001 TAGGAGCTCA AACCCCACTA TCACACAGTA TACCCTTGTA ACAAGCTGAT
9051 GGTGTAACCC CTGAATCTAC AATAAAATTA TTTTATTTTA AAAAATCATT
9101 ATAAGGATTT TTAATAAGAA GGATTCCTAG ACAGGTGCAG CCAACAATT
9151 TTTTTTAAAT GTTGGCAGGC CGCCACCGCC AGTCACTTAT GCTGCAATAG
9201 CCCATGTCCC AACATTCCCA ACCTACTTCT CTCCAAAAGA GAAGCTATAC
9251 TTTTCAGATGG CCCTGTGCTG GGTTCCTCCT GGAAGTTTCT GGGGAAAGGG
9301 GCTTGAGTTG CCCCAGCTGG ACTCTTCCTG GAGTGGGAGC CGGGGCTTCT
9351 GATCAGACGT GAGTGAGGCA GGAAGTCCCG GGTCTCCAG CGCAGCCCAG
9401 AGTGCGGTTT CACGCAGGTC CCGGGTCTCG CGCGCTCGCG CTTTGTGCGT
9451 GAAGCCGTTA GGATGAGCCC TCTCCTTCCA GAGCTTTAAC CGATGAAGGT
9501 GCATTGTGTT TGGCGCCCCT GAGGAGGATG CTGTCTTAGG CCTCTTCCCA
9551 CTGGACGTGT GTGGTGGGCA GAGATCCCGT TCGTCGGTCG CACTTCCACC
9601 CCGCTGGGGC TCACTCAGGC CGCGGAGCTG CGAGGGAGAC ATCCTCGATG
9651 GACTCCCTCT ACGGAGATCT CTTTGTGATC CTGGACTATA ACAAGGATGG
9701 GACCTTGGAC ATTTTGTAGC TTCAGGAAGG CCTGGAGGAT GTAGGGGCCA
9751 TTCAATCTCT AGAGGAAGCG AAGGTGGGTC TCACTGGGGC TGTAATCAGA
9801 GAGACGTTGG GGCTGGGAGC CCTGGAGAGG CATTGGGCAG AGAGGGCAAA
9851 ATTTACATGT TGTCAAGCTT GACCTGGGCC CACTGCAGTG TTCAGGTGGT
9901 TGACCAGCGT TACCGTTTAT TAAGAATAAC AACACAGCTA ACACATTTCT
9951 CAAGTATTTT TCTCCGTTTT CTCCTTGGCT GTAGTAAAAT CTCCAACCTC
10001 AGATTGCTTG CAAGATGTTG GCTACATACA GCCTTGTCTT AGGAGTCACC
10051 TTGTTCAATG TGCTCACCTG TCATTAGTCA CCCAGAGGGG CGTCTAGGCT
10101 AAAGATGCGC CCTCCCCAGT TCAGAGAAGT GGAATAATCA CTCTACGTGT
10151 ATTTGGGAGT GGGGTGGTGA TTGGAAATTT TCTGATGTTA TGTTTTGGTT
10201 TCTGTTCTCT GAAGGGGGCA GTGGAAGTGG CTTTTACTCT CGGGTTTCAC
10251 TAGTGCTGAG GTTTCCTCAT AATATGCCTT AATTGATAGA CCCTAGTTAT
10301 CAGTACCGAG CTTAGGCTAA CCCTTCTCTT CCCCAGAAGG CTAACCTACA
10351 GGCTCCTTCT CAGCATGTTG TGCTTCGTAC ATACTCCTAT TGCAGTATTT
10401 CCAAGTCATT TTTCAATTTG AATTTATTAT TGTATATAAT AATTACTTTA
10451 TAAGTATATT TGCTCTTTGG ATGTTTGACC CGGTAGACTG GGAGATCATG
10501 AGCATGTGGA CTATTGAGTT TATTTTGGAT AATTGGTACT TCGTGCCCAA
10551 AAAACTGTCA GTTGAGTTCT GTCATGTTGA AATTTAGTAA AACTCTTTCT
10601 ATTAGCCTAG TGAAGTTTGG GAATATTGAA GCATCCATT AGTCATGGGT
10651 CAGTTCTAGT TTGAGCACAT TCTATATTCC AAGCCCCATA CCCTGGTATC
10701 CTCATCTGTT ATATCAGAGG CCTGGACTGT GTACTTTCTG TGGACCAATT
10751 CAGTCCAAAA TGTTATTTCT GCAAAGCTTA TCTGGATTTT TAATTCCTAG
10801 AAAAAAGCAG TGTTTCTCCT TTTAAAGTTA AGTGTCTTGT TTCAGGTGCA
10851 GTGGCTCATG CCTGTAATTC CAGCACTTTG GGAGGCCAAG GCAGGTGGAT
10901 CACTTGGGGT CAGGAGTTCA AGACCAGCCT GGCCAATATG GTAAAACCCC
10951 ATCTCTACTA AAAATGCAAA AATTAACCGG GTGTGGTGGT GGGTGTGTGT
11001 AGTCCCAGGA GGCTGAGGCA GGAGAATCAC TTGAGCCTGG GAGGCAGAGG
11051 TTGCAGCAAG CTGAGATTGC ATCACTGCAC TCCAACCTGG GTGACAGAGT
11101 GAGACTCCAT CTCAAAAAGA AAAAAAAAAA GTTAAGTGTT CTTCATATTT
11151 GTTTAAAGAC ACTCTTATAT TTAGATTTGC AAGTGTAAGT TGTATTTGTT
11201 TATTGTATAC AAATAGCCTT TTCATAAGAA ATTCTGGGTT AGCTATCAAG
11251 TCGAATCTTT TGAAACACAT TTCTTCCTTA TTGAAACAAA AGGTTTGTAG
11301 AGCTGTCTTG CATTTTTGGC AAGGACGCTT TGTGTACCTA GTGGTGACTG
11351 AGGAGGGTTC ACATGTCAAA ACCCAAGGGA GGGGTGTCCC CAGAGAATTC
11401 TGCACCAACC ACACAGAACA TTCTGTTTCA GAGGAGCACC ATTGTGACTT
11451 TTCCTCAAGT GGCAGTCACA TCGTTAGGAG GTTTTGATGT GAGGTCTCTT
11501 CCCACACGTC TCCACCTCCC CAGTAGGAAA ATTTGTTTAT ATAGACAAAA
11551 CTCAACTGAT TAAAAAATAA AAAAAGAAAT GATACTTACA TTGTCGTGTT

FIGURE 3D



| | | | | | |
|-------|-------------|------------|-------------|-------------|------------|
| 11601 | AAGATACAAA | AGCAATAACT | TTTTATTGTG | AAAATAGTCT | GTTTTTGAAC |
| 11651 | AATATATTGT | TTTGTTTTTT | CCTGTGAAAG | TTGAGAAACT | AAATATACGA |
| 11701 | AGAGATAATG | GTCAGACCAT | AAATAAAAAAT | AGAAGCTTTGA | CTCAAAATTT |
| 11751 | ACAGCAGTCT | GCCCAGAAAA | CCAGCCCTTT | ATCTAAAATA | AACAGACCAG |
| 11801 | GAAACCAGCC | TGTTATGTCA | GACTTATAGG | AAGTCAGGTT | GCTATCTCTA |
| 11851 | GAGACAATAC | ACAAAGCTAT | GCAATAACTG | CTGTAACAGC | CCCAAATGGT |
| 11901 | CAGAAATTTGA | TTAATAACCG | ACAGCCCCC | TAATTTTTTT | CTTCACTNNN |
| 11951 | NNNNNNNNNN | NNNNNNNNNN | NNNNNNNNNN | NNNNNNNNNN | NNNNNNNTTC |
| 12001 | ACCGCTTGCT | AGAAGTGTGG | CCTTGGGTCA | TGTTATTTAA | TGCCTGGAGG |
| 12051 | CCTCAAATGT | TAAGTAGGTA | ATGGTAAGAC | CTACCCAGTA | ACTTAGCATA |
| 12101 | AATAGTAAAT | TCATTCAATT | AATGTTTTCA | AACAGTGCCA | GACATTGTTT |
| 12151 | AATGAACTGG | GGATATAGTG | GTGAACAACA | CTGACAGCGT | TCTTCATTGT |
| 12201 | ATTCTCAAAA | CCCTCCCTAT | AGTAAGTAGG | TCTGTGTGTG | TGTGTAGGTG |
| 12251 | CATGGGGAAT | AAAAAATAAT | AAGCAAATAA | TGAACAATAA | AATTATTTTA |
| 12301 | TTTAAAAAAA | AAGAAATGAT | ACTTACATTG | TCGTGTTAAG | ATACAAAAGC |
| 12351 | AATAACTTTT | TATTGTGAAA | ATAGTCTGTT | TTTGAACAAT | ATATTGTTTT |
| 12401 | GTTTTTTCTT | GTGAAAGTTG | AGAAACTAAA | TATACGAAGA | GATAATGGTC |
| 12451 | AGACCATAAA | TAAAAATAGA | ACTTTGACTC | AAAATTTACA | GCAGTCTGCC |
| 12501 | CAGAAAACCA | GCCCTTTATC | TAAAAATAAC | AGACCAGGAA | ACCAGCCTGT |
| 12551 | TATGTCAGAC | TTATAGGAAG | TCAGGTTGCT | ATCTCTAGAG | ACAATACACA |
| 12601 | AAGCTATGCA | ATAACTGCTG | TAACAGCCCC | AAATGGTCAG | AATTTGATTA |
| 12651 | ATAACCGACA | GCCCCCCTAA | TTTTTTTCTT | CACTTCCAAC | TTAGGACGAA |
| 12701 | CCAGAGAAAG | CTAAATATGC | ACCACCTACT | AATCAAATAG | GGTGCCCGCT |
| 12751 | TTCTAATGAA | CCCTCCTACA | GCTTCCCCAG | GCCAGCAGCC | CCCAATCAGG |
| 12801 | AAACGCTGA | AGCCTTCCCT | TTTTCTCACT | GTAAAGCTTT | CCCACTCCTC |
| 12851 | TGCCTGGCTT | TGAGTCTCTG | TCAATACACA | AGTGAGGGTG | TCTGACTCCC |
| 12901 | TTGCTATAGC | AAACTCGGGC | CAAGTAGATT | TTACTTTTCT | CATTTGATTG |
| 12951 | GTCTTTTATT | TCTAGAAGGA | ACATACAAGA | AAATTTAAAG | GGGAATCCAT |
| 13001 | TCCTAATCTT | TCATATTATA | GTAGTCCCCT | TTTATCTGCA | GGGCATATTT |
| 13051 | TCCAAGACCC | CCACTGAATA | CCTGAAACTG | TGGGTAATAT | TGAACCCTAT |
| 13101 | ATATACTCTC | TCTATATATA | CATATATATA | TATATTTTTT | AATTTTTTTT |
| 13151 | TACTTTATCT | TTAATTAGCT | TTAGCTCTTT | TTTTTTTTTT | TGAGATGGAG |
| 13201 | TCTCACTCTG | TCACCCAGGC | TGAGTGCAGG | GGTGCAGTCT | TGGTTCCTG |
| 13251 | CAACCTCTGT | CTACCGGGTT | CAAGCAATTT | CTTGTGCCTC | AACCTCCGGA |
| 13301 | GTAGCTGGGA | CTACAGGCGT | GTGCCACCAC | TTCTGGGCTA | ATTGTTTTAA |
| 13351 | ATTTTAGTAG | AAACGGGATT | TCACCAAGTT | GGCCAGACTG | GTCTCGTACT |
| 13401 | TCTGACCTCA | AGTGATCCGC | CCACCTTGGC | CTCCCAAAC | GCTGGGATTA |
| 13451 | CAGGCGTGAG | CCACCATGCG | CCCAGCCATA | GACTATATAT | TTTTGATCTG |
| 13501 | ATAACTGGTT | GAGCTACTAA | GTGACTAACA | GGCAAGTAGC | ATCTATAGTG |
| 13551 | TGGATATGCT | GGACAAAAGG | ACATTACACT | CCTGGGCAGG | ATGGCACAGA |
| 13601 | ATGTTGAGAG | ATTTTATCAT | GCTACTCAGA | ATGGTGTGCA | ATTTAAAACT |
| 13651 | TATGAGTTGT | TTGTTTCTGG | AGTTTTCCAT | TTAATAGTTC | AGACCATGGA |
| 13701 | TTGACCGCAG | GTAAGTAAA | CTGTGGAGAG | TGAAACTGTG | GATAAGGGAG |
| 13751 | GACTATTGTA | TTGTAAAGTC | AGACTCATTA | GGCAATCATA | ACTCTTGATT |
| 13801 | TGCCATCAGA | AATGCTGCAG | AAATATGGGT | TAAAAAAAAC | TGTTCAAAAA |
| 13851 | TAGGGTCAGG | GATGTCCTTT | AACTTGTTAC | TTCCAAAATG | TTAGTGAAAA |
| 13901 | CTGTGGCCCC | AAAGAGTGAA | AGGAACAAAT | GACTAAGAGA | AAATCTTGTT |
| 13951 | TTCAGGATGA | CAGATTAAAA | AAGAAGCAAC | TTGCTGAAAC | ACTGAAAATC |
| 14001 | TCTCCACTTG | TAAGATAACA | CAAACTGGC | TAAACTGGT | TGGAATGAAT |
| 14051 | ATGGCCAAC | CAAGTCTGCA | CAGAACTAAC | TTGGTGATGT | TACAGCCCAA |
| 14101 | ATTTCCACCA | CATATTTTAT | ACTAACTCCC | CCCGGATTTT | CACACATGAT |
| 14151 | CTGTGAGGTA | GCATGAAGAG | GTAAGTATGC | ATGCTAAGG | ACTTGGGAGA |
| 14201 | CCTCCCCATT | TCCTTCCACC | AATCACCAC | TAATCCCAGA | ATCCGCCCCC |
| 14251 | AAACCTTTTC | TAATAACTAC | CTTAAAGCCA | GCATAGGGAG | ACAGATTTGA |
| 14301 | GCTGGACTCC | TGTCTTCTTG | TGGGTCACCT | TGCAATAAAA | AGCTTTTCTT |
| 14351 | TTCTCAACAC | CTGGTATTAT | AGTATTGACT | TCTAGTTCAT | CGGGCAGCAA |
| 14401 | GCCCCCTTTG | GTCGGTGACT | ATTCTTGTTT | GCTGATATTT | CCATTGGCCA |
| 14451 | AAATATAAAC | CTCTTAGATG | AACTTCAGT | ACGTAAATGG | CGCCACAGAA |

FIGURE 3E

TECH CENTER 1600/2900

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TECH CENTER 1600/2900

| | | | | | |
|-------|------------|------------|------------|------------|------------|
| 14501 | TGCTGTGACA | TTTTTCTCTT | GGATTATAGC | AGGTTACTTT | ACTGAATACC |
| 14551 | GTAGGCAGTT | ATAACACACT | AAGTATTTGT | GTATCTAAAC | ATAGAAAAGA |
| 14601 | TACAGTAAAA | ATATGGTAAT | TTTTTTCAAC | TTTTAGTTGA | GATTTGGAGG |
| 14651 | GTATGTGCAC | ATTTGTTACA | AGGGTATATT | GCATGATGCT | GAGGTTTGGG |
| 14701 | GTACAATTGA | ACCCTGTCAC | CCAGGTAGTG | AGCATAGTAC | CCAATCGATA |
| 14751 | ATTTTTCAAC | CCTTGTCAT | TCCCTCCCCG | TTCTTGAGT | CCCCAGTTTC |
| 14801 | TGCTTTTCCC | ATCTTTATAT | CCGTGTGCAC | CCCATGTTTT | GCTCCCATGT |
| 14851 | GTATGTGAGA | ACTTGTGGTG | TTTGGTTTTT | TATTTCTGCG | TTGATTGCT |
| 14901 | TAGGATAATG | GCCTTCAGCT | GCATCCATGT | TGCTGCAGAG | GACGTGATTT |
| 14951 | TATTCCTCTT | TATGGCTGTG | TAGTATTCCA | TGGTGAAGAA | TATAGTACTA |
| 15001 | TAACCTTACT | AAATCACTGT | CATATATATG | GTCTATCATT | GACTGAAATG |
| 15051 | TATACAGTGC | ATGATATATA | TATATATATA | TCTATAATGT | CTTATCCATT |
| 15101 | TCGTGTATTA | TGAGATTTGA | TTGCTAATAT | TTTATACAGG | AGTTTTGCAT |
| 15151 | CTTTTTCAT | AGTTGACATT | GCTTGTAATT | TTCTTTTTTT | TGTGATGTCC |
| 15201 | CTGTTAGGTT | TTAGAATCAA | GTGTATACCC | GCCTCATAAA | ATGGGTGGGA |
| 15251 | AAATGTTCCC | ACCCTTTCTG | TTCTCTGGAA | AATTGGTGTT | TTTTTCTTAA |
| 15301 | AGTTTGGTAG | ACATTATTGT | TAAAACCATG | GGGTCCTCGA | TTTTTCTTCA |
| 15351 | TGGAAATGTT | TTCAAATTAC | ACTTTAAATT | TCTTTAAAT | CTGAGTATAG |
| 15401 | GGCTATCAGA | CTTCTGCTG | TCTTATGTCA | GTTTTTAATA | AGTTGTTTTT |
| 15451 | GTAGGCGTTT | GTTATCTCAC | TTTCATATTT | TTGATATAAA | GCTTTTCATA |
| 15501 | ATATCATTA | TGTCTATAGT | GTCTAGTAGT | TTCCATCTTT | ACTTTCTGAC |
| 15551 | ATTGGTTATT | TGCCAGTTTT | AGGAGTTTAT | CAATTTTATT | AGTCTTTTCA |
| 15601 | AAGAACCATC | TTTTGGCTTT | GTTAATCCTC | CCAATGGTGT | GTTTTCTTTC |
| 15651 | TCATTACTTT | TTGCTCTTTA | TTTCCTTCAA | CTTCTTTTTT | GCTTAATTTT |
| 15701 | AAAATAATTT | CTTGAGATTG | AGATAAGCCT | CAATGATGGG | TCACCGATTT |
| 15751 | CCAGTCTTTC | TTCTTTTCTA | ATTATGCATT | TTAAACCAGA | AATCTTTCTC |
| 15801 | TAAGTTAGCA | TTAGTTGCA | GCTCACAAGT | TTGAGATCTG | TCTCTCAGTC |
| 15851 | TGGAGGTTGG | AGATCTGACC | ATGACCATGA | AACCATCCAG | TCACAATGTG |
| 15901 | GCATTATTTT | TTTAATTTTT | TTTTTTTTTT | TTGAGATAGA | GTTTCACTCT |
| 15951 | TATTGCCTAG | GCTGGTGTGC | AATGGTGCGA | TCTCGGCTCA | CAGCAACCTC |
| 16001 | CACCTCCAG | GTTCAAGCGA | TTCTTTTGCC | TCAGCCTCCC | AAGTAGCTGG |
| 16051 | GATTACAGGC | ATGCGCCACC | ATGCCCAACT | AATTTTGTAT | TTTTAGTAGA |
| 16101 | GATGGGGGTT | CTCCATGTTG | GTGAGGTTGG | TCTTGAACCT | CCGACCTCAG |
| 16151 | GTGATCCGCC | CACCTCAGCC | TCCCAAAGTG | CTGGGATTAT | AGGAATGAGC |
| 16201 | CACCTGTGCC | GGCCCAACTT | GGCATTATTT | ACCCAGAAGA | GCATGACCAT |
| 16251 | GAGAACAGTA | GAATTTGTAA | GCTTTGAGTG | GGTGACTATG | AGTGTCATAA |
| 16301 | TAGGTAGATA | GGTTATATTT | TGGGTGGTGG | TAGGAGAGGG | CTTACAGTTT |
| 16351 | GCTATGACAG | CTTTTATAT | GGATCATCTT | TAGTAAAAGA | TTATTTAATT |
| 16401 | TTTGAAATCA | AAGGGGAAAA | CACTAGTTTA | GGCTTTCTTC | TTTCTTTCTT |
| 16451 | TTTTAGAGAC | AGGGTCTTGC | TCTGTACCA | GGTTAGAATG | CAGTGGTGCA |
| 16501 | ATATTGCTCA | CTGTAACCTC | AAATTCCTGG | GCTCAAGTGA | TCCTCCTACC |
| 16551 | TCAGCCTCCA | AGTAGCTAGT | ATTTACAGGC | ATGCACCAAC | ACATCTGGCT |
| 16601 | AATTTTAAAA | ATTTTTTATG | GAGATGAGGT | CTCACTATGT | TGTCCAGTCT |
| 16651 | GGTCTTGAAT | CCTGACCTCA | AGTGATCCTC | CCCCATCAGC | CTCCCAAAGT |
| 16701 | GCTGCAATAT | TTTAAATCCT | GTGGTAGGTC | AAGTGGTTGT | CTTCTATCTT |
| 16751 | GGGGTTTATA | AAGTACATGT | CAAGAAATTT | AGGGTATGGT | TAGATTAGCT |
| 16801 | TTAAAAATGT | CATGTTTTAT | AAAAATCAAT | GCATCATTTT | TCTGATTGAA |
| 16851 | AATTTAACAC | AAGACTCAGA | ATCTTTTTCG | AGTAGTGGAA | TTACTTTTAT |
| 16901 | TATAGATCTT | TGCGATAATG | AATGATGATA | CATCTGGCCA | AAAATAGGTA |
| 16951 | CTATAGTCTT | TTAGGAAAC | AGCTAATCTG | CTTGAAATAT | GTGTAGAAAT |
| 17001 | AATTTAGTGC | ATCAGCCCAT | ATTGGCAATA | ACTTCTCTCT | AATTTTTTTT |
| 17051 | TATAGAAAAT | TTTTACTACT | GGAGATGTCA | ACAAAGATGG | GAAGCTGGAT |
| 17101 | TTTGAAGAAT | TTATGAAGTA | CCTTAAAGAC | CATGAGAAGA | AAATGAAATT |
| 17151 | GGCATTTAAG | AGTTTAGACA | AAAATAATGA | TGGTGTGTCT | TTCTTTTGTA |
| 17201 | TTTATCACCA | GCTATGAAGA | AGCATTATC | ATGCTTTCAA | GAGTCTAAAA |
| 17251 | GGATGCTTAT | TTAATCTCTC | TGGTTTTAGA | TGATAATTAT | TATTTGTGTT |
| 17301 | AATACTTTTT | TTTAGTAATG | TGATTTTTAT | GTAGAGTTTA | TATTATTTAG |
| 17351 | TGAAGAAAAC | TTATAGATAG | CTTTTCTTTT | TCATTACTTT | GAAATGTAAT |

FIGURE 3F



17401 GAATTACATT TCTGAATTAA AAACGTGGG CAGGGCCTGT TGTAAATGTT
17451 AACTATGGAA CATTATGCTG ATTTGAGTTA AACCTGTAGG TTAAAAATAA
17501 TAATTATATT TTCTTGTCCT CTGGGTAAAA TGAGATTTCT TTTTATTTGT
17551 ATAGAAGAAT GACAGTTGTG TCATCTAAAA TTTAAAAAAC TTTCAGATTA
17601 TCTTGCATCT GTTAGTTTTT TTGGAAGAAT TAATTTAGAG AAGATATCTC
17651 TGATCCTGGA AATTAGGGAA AAATAGCATA TAAACGTTTA AGTGTGTACC
17701 TTCTGGTTAA GATTATGACT TCTATATTTT GATTAATAGG TTGGAGTTTG
17751 TCTTAATCTG TTTTCTGTTG CTGTAATGGA GTACCACAGA CTGGGTAATT
17801 TATGAAGAAA TGAAATTTAT TTCTTATAGT TCTGGAGGCT GGGAAATTCA
17851 AAGTTGAGCC GAATCTGGTG AGGGCCTCTT ACTATGTCAT AACATGCTAG
17901 CAGGCATCAC AGAGCAAATG CACTACCTCA GATCTCTCTT CCTCTTCTTA
17951 AAAAGCCACT AGTCCCATCA TGGGGGCCCT ACTCTGAAGA CCTTATCTAA
18001 TTCTAATTGG AAATAGGGTC TTGAAGCCCT CATCACTAGA GGTAACCTTT
18051 AACAGGAAGA GAGAATTTAT AAAAATTATA ATGCAGCACC AAATCCCTCC
18101 CTACTTGTGA ATAGTCAAGG TCATTTTCATT TACAGACTTG TTATTAAAGA
18151 AACAGGTTAA ACAAATAGAT TGAGAGGAAA TGTGGTTTCAT GTCTGAGATC
18201 AGCAAACCTT TTTGTCCAGA AGTCCAGATA ATAAATATTT TAGCTTTGTG
18251 GGTGATGTGG TCTCAGTTGT AGCTACTTGT CTCTGCTGCT GTACCTCAAA
18301 AGCAGCCATG GATAATATGT AAATGAATGG GGATGACTGA TTCCAATAA
18351 AAACCTTATT TACAAAGATA GTTAATACAC CTTATTTGGC TTGAGGGTTA
18401 TAGTTTGCCA TCCCCTGATT TACAATGAAT ATTAAGTTT AATTCAAAGC
18451 AAGTTCCTTC AAACAAACAA ACTAAACTCT AGATGATTTT GAAGATTATT
18501 CACATCTGTG ACTCTCAGCC AGGAAGAGCT GAGTTTGGGT TGGAAAGTAG
18551 TACTATTGGA ACATTTGTTG CCCATAAGCC TTACAATATA TGCCCCTAAG
18601 TCTAGCCTTA GTCCAGTCTT CTAGCAAAAC TCAGTTTTCT TTCTTCTCTG
18651 CAACTTTTCA TTCCAACATC GACCCTCTGC AGTTCAGATT GTCTTGCAGG
18701 TCAGATTGTC TGTGTGCTGC TATGGTAGGC AGTAGCTGAG AGATGGAGCT
18751 ACCTTAAGAT GAATTGCCAG ATAATCAGAG GTCAATTATC CCAGTGCATA
18801 AGTAGTGTAC ATATCAATTG TTCATTTTAT AAAATTCTAA ATGAACCAGA
18851 GGCAATAATT AAAGATGAAA TTTTGATGGT ATATTTGTAG GAAATCTACA
18901 CAATGTTTCC CTAATTTCCC ATGTTTGTGT ATTTTAAAAA AATGTGGCAT
18951 TATTGGTTCA TATTTTATT TTTTAGACTT CCTTAATGCA AAACATATAC
19001 AGTTGATCCT CATTATTTGG GGATTCTGTA TTTGCAAATT TGCCTACTCA
19051 ATAAAAATTTA TCCCCAAAGT AACCCCAAAA TATATACTCA CAGTACTTTC
19101 CCAGGCATTC ATGGACATGC ACAGAGCAGT GAAAAACTTG AGTTGCTCAG
19151 CATGTACATT CCTAGCTAGT AGAATAAGGC AATACTCTGC CTTCTTGTTT
19201 CAGCTCTCAT ACTATTAECT AGCAAGTATC CCTTCAAGG TCTATTTTGT
19251 GCCAGTTTTT GCATTTTTGT ATTTTGTGTG GTAATTTCTT TTTTAAATG
19301 TTCCCCAAAG GTAGTGCTGA AGTGCTGTCT AGTGTTCTTA AGTGCAAGAA
19351 AGCCATAGCA TGCCTTATGG AGAAAAATATA TGC GTTGAT AAGCTTTGCC
19401 CCAAATTCAA TGTTAGTGAA TCAACAGCAC ACATTAATG AGGTGCCTTC
19451 AAACAGAAAC AGACATAAGA CATGGTTATG TATTAATCAG TTGATGAAAG
19501 TGTTGTAATC AGAGGCTCAC AGGAACCTAA CCCTGTTTTT CCTGTAGGAA
19551 CAATGGTTTG GTATTTGCTA ATTCAGTGTG TGCAATGAAT ATAGAATTTT
19601 ATGGAAGATG ATTGCTGTGA ATAATGAGAA TTAACCATAT CTCTTTAAGA
19651 GTGCATTTCT AAAGGAGAAT ATTCAGAAGG GTATTTGCTA AATTTCTTTA
19701 CTAACAGATG CTGCCTCTCA CTGTCCTTAC ATGGTCCAGA TTCTCATGCT
19751 GCTCCTTCCC TCTCCCCAGG AGGATTCTCT CAGAATCCTG TCATCTCCTC
19801 CAGGTCCTT TCTCCAAGAA AGTCTATCCT TTCACCACTA ACAGTAATTT
19851 TGGTCTTCTT CTTTTTCTGG AGAAGTCAGC TGTTTATGCT GCTTCAGCAC
19901 CAGACCTCTT CTACTTTTGT TTTGTTTCAT TCTTTTTTCT GTACAGTAGT
19951 CTTAGGATTC CTTAGAGCCT GTGAGCTGCT AGAAGGAAAT ACAGCAGTGC
20001 TTACATTTAT TGCTTCTATT TTATTTTCTA TTTTCTCTTC CTGTCTTCTG
20051 ATTGTTCTCC TTCTGTCCAC AAACATGCTC TAATTTCCCT AGTATTAAAA
20101 ATTTTCTGTC TTTTGTGTGT CTTTATCCT TGCTCCCTTA TTTTACTGCT
20151 CAGATTTTAA TTTTATTTTA TTTATTTTGT AGATGGAGTC TCACTCTGTC
20201 ACCCAGGCTG GGGTGCAGTG GCGGATCTC AGCTCACTGC AACCTCCGCC
20251 TCCCAGCTTC AAGCAATTTT CCTCTTTTAG CCTCCCAAGT AGCTGGGATT

FIGURE 3G

FEB 19 2003
PATENT & TRADEMARK OFFICE

Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

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20301 ATGGGCACCT GCCACCATGC CTGGCTGATT TTTCTATTTT TAGTAGAGAC
20351 GGGGTTTCAC CATGTTGGCC ACACTGCTCT CTAACGCTG ACCTCAGGTG
20401 AACCAACCCGC CTCAGCCTCC AAAAGTGCTG GGATTGCAGG TGTGAGTCAC
20451 TGTGCCCTGGC CTTTTACTGC CAGATTTTTA AAAGAATAGT CTGTGCTTTA
20501 GCTCTATTTT CTCACTTACT ACTTCTCTTT AACTCAGTCA TATATGATGT
20551 TTTGCATAGT AAATGTCTAG TAATTTATTA AAAATGTAGA AATAGGTACT
20601 TTTAAAATGA ATAGATCCTA CTTTAATTGA ATTTATCTTG GAGTTAGAAT
20651 ATCTTGATTT GGATTTTAGT TCTGCTACTT CTTAATTACA TTACTTGGTA
20701 AGGCCACTTG TGAAGTCAGT CTCTTTGGAG GAATATTATT TATCTATAAG
20751 GCTGTTACAA TFACTGAATT TTAaaaaaATG TGTATTTATT TTTTAATGTA
20801 TTTGTTACAT TTTTAGTATT GATGTTGGGA TAGGCATTTA AGCAAGTCTA
20851 TAACTCACCT ACATGCATAA TTTTGCCTTA ATCAGTTTAA AGCTTTCTCT
20901 TAAATGAGAG ATTTGAAATT CATAATTTCT GTGGTTCTTA TCAGTTCTGA
20951 GTTTTATTTT TTGCCCTTTT TATTTTTTTA AAGGAAAAAT TGAGGCTTCA
21001 GAAATTGTCC AGTCTCTCCA GACACTGGGT CTGACTATTT CTGAACAACA
21051 AGCAGAGTTG ATTCTTCAAA GGTAAGCTCT TCATGTTGGT CAACAATTGA
21101 CTTTCACTTT AATATCCTGC ATTAGAACTC TGTGTTTGTA AGTGTGGCTT
21151 TAAACACCT CCCTAGTCTT CATTATGTAT ATCCAAGATC TTTTGTCTT
21201 TTTTCTCCC ATTCATTTTG TATGTGTACA TTTATCTAAA GTGTAAGAAT
21251 GGGAAAGTGA AGCTCAGACT GGACTCTTTC TTTCAAGGCC TCAAAGGATA
21301 GTGGAATGGC AGGAAGTAAG GTTTTAACTC CATAGATGAG GAGCTGAAGA
21351 GTTTTGGTGT TGCTTTTTCT CCATTTGATF TCTAATGTGA CAGTAAACT
21401 CATTGATTCA AACTAAGAAG ACTAGCAGAT TCATCACATT ATTTAACCTA
21451 GATGTGACTG GAAAAAAGGG AAATTACTAA GCTCTCCAAG CTAACAAAGA
21501 AATACCTGTT TAAACTTTCA GAAAAACAGAA ATGCAAATTT GAACCTTATT
21551 GTCTGGGGCA ATCAGTTTGA CTATTTAAGT CAGACTTTTA TACTCTTAAT
21601 GTTTTGTTC GCAGTAATCT CTGCAGCCCA GGTGCTCTCA
21651 AATATCTGT TGCTATAAAC ACAGGGCAGG AACTGATTTT TTATGATAAC
21701 GTAAAAACAGA AAAGGACAAT TATATTGTAT TAATATTGTT GTGAATATTT
21751 TCAGTCTCTA CATTGTCTAA AAATCTTTCT AAATGGCTTT GTTATTGAAT
21801 TTATCTCATT TTATATCTGT GCCAACAGCA TTTTCATCCT TTCTCTTCAT
21851 AATTTCTTTT ACAAACAGCT GCTCAAGAGG AAGGCTCAA GTCTCAAGGC
21901 TGAGCACGTA ATGACTTTTG TTAGTACTAG ATGAGAAGGG CTTTCTGAG
21951 GAAATGAAAA CCTAAAACAT GAAAAAGAAGA TAAACAGAAT TTGGACAGTG
22001 AGATATAGAG CATATAATAT TCTGCTTCTA AAGTAATATT CTTCTAGGAA
22051 AGTGAGGGCG TTTCCCTGGC TGTTAGGCCA GAAATCATAT TCCTATATTT
22101 TCTTTGATAG CTTTAGGAAT AATGCAAAT CTAAGCCCAA GCTTCAGAAT
22151 AGACTAAGAA GTATTAGCTT AGCTGCCATG ACAAATACC ATAGGCTGGA
22201 TGCACTTAAAC AATGGAATT TAGTTTTTCA CAGGTCTGGG AGCTGGGAAG
22251 TTTAAGATGA GATGCCAGC ATGGTTGGGT TGTAGTGAGG GCTCTCTTTC
22301 TGGCTTGCAG ATAGACCCCT TCTCACTGTA TTGTCATATG GCAGAGAGAG
22351 AGAGAGAGAG AGAGAGAGAG AGAGAGAGGG GATCTTTCTC TTGCTTTCTA
22401 TTATAAGGCC ATAGTCTGT TGGATCAGGG TTCCATTCTT ATGACTTTAT
22451 TTGACTTTAC CCCCCTAAGA TGCTATCTCC AGATATAATC ACACGGTGGG
22501 TTAGGGCCTC AACATTTGGA TTTGGGAGGG ACACAGCTCA GTCCATAGCA
22551 AAGGATAATG CAGAGGGTTG GATATTTAAA AGTAGCTACA CAATTTTTAA
22601 TATAAATATT TTATGGTAAC TTTTTTTTTT TTTTGAGATG GAGTCTAGCT
22651 CTGTTGCCCA GGCTGGAGCG CAATGGTGCG ATCTCAGCTC ACTGCAACCT
22701 CCGCTCCCA GGTCAAGCA ATTCTCCTGC CTCAGCCTCC TGAGTAGTTG
22751 GGAATATAGG CACGCGCCAC CACGCTGGC TATTTTTTTT TTATTTTAC
22801 TAGAGACGGG TTTGCACCAT ATTGGTCAGG CTTGTCTCGA ACTCCTGACA
22851 TCAGGTGATC CACCCATCTT GGCCTCCCAA AGTGCTGGGA TTACAGAAGT
22901 GAGCCACCGC GCCTAGCCAG CAGCTTTACT GAGATGTAAT TCACATGCCA
22951 TAAATTCAT TTTCTAAAGT ATACAATTCA GTGACTTAAA ACATTTATTT
23001 ATTTTAAAT TGACAGAATT ACATGTATTT ATCATGTACA ACATGATGTT
23051 TTGAAGTATA TGTACATTGT GGAGTGACTA AGTCTAGCTA ATTAACATGA
23101 TACATCTCAT ACTTAATGAT TTCTGTGGTG AGAACACTTT ACATCCATTC
23151 TCTTAGTATT TTTCAAGAAT ATAATATATT ATTATTAATT GTAGTCTTCA
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FIGURE 3H

RECEIVED
FEB 24 2003
TECH CENTER 1600/2900

FEB 19 2003
PATENT & TRADEMARK OFFICE

23201 TGTGTATAG TGGAGCTCTT GAACTTATTC CTCATGTCAA GCTGAAATTG
23251 TGTGTCCTTT AACACAAACC ATACCCGACT CCCAAAGTAT TCTGCTCTCT
23301 GCTTCTATGA GATTAACCTT TTCTGATTCC ACATGAGTGA GATCATGCAG
23351 TATTTATTTG TCTTTACCTG GCTTATTTCA TTCATATTGT TACAGATAAC
23401 AGGATTTCTT TCTTTTTTTA ATGGCCGAAT AGTTTTCTAT TGTATATGTA
23451 TAGCACATTT TCTCTCTTCA TGCATTGGTG GACACTTAGG TTGATTCCGT
23501 ATCTTGCTA TCGTGAATAG TGCTATAATG AACATGGGAA TGCACATGGC
23551 TCTTTGACAT ATTGATTTCA TTTTATATAT GTGTATATAT ATATGTATAC
23601 ACACACATAC ATACAGTGGT GGGATTGCAG GATCATATGG TAGTCTATA
23651 TTTAATTTTT AAAGGAACTC CATACTGCTT TCCATAATGG CTGTATTAGT
23701 TTAACCTCTC ACCAACAGGG TGCAAAAGTT CCCTTTTCTC TACATACTTG
23751 CCAACACTTG TTATCTTTTG TCTCTTTGGT AATAGTCATT CTAAGTGTAG
23801 TATGAGGTGA TATCTCATTG TGGCTTTTAT TTGCATTTCT GTGGTAATTA
23851 GTGATAATCGA GCTTTTTTTT TTTTTTGAC TTTGGCCATT TGTATGCTT
23901 TGAAAAATGT CTATTGGGGT TTTTGGTTG TTTATTTGAG GTTTNNNNNN
23951 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
24001 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
24051 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
24101 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
24151 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
24201 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
24251 NNNNNNNCCG GGGTTCCTT CATTCTCCCT GCCTCAGCCT CCCCAGAGTA
24301 GCTGGGACTA CCAGGGCACC CGCCACCAC GGCCCGGGCT AATTTTTTGT
24351 ATGTTGAGTA GAGACGGGGT TTCCTGTGT TAGCCAGGAT GGTCTTGATC
24401 TCCTGGCCTC GTGATCTGCC CGCCTCGGCC TCCCAGAGTG CTAGGATTAC
24451 AGCGGTGAGC CACCGCGCCT GGCCTGATT CTAGTTTTTT ATTATTGTGG
24501 TCGGAAAAGA AACTTGATAT GATTTTATTG TGCTTAAATT TGTAAAGACT
24551 TGTTTTGTGG CCTAACATAT GATATCCCCT GGTGCATGTT CCATGTGCAG
24601 TTGAGAAGAA TGTGTATTCT CTTGCCATTA GGTGAAATGT TTTATGTCTG
24651 ATCTGTCCAT TTGTTCTAGA GTATAGTTTA AGTCTGATGT TTCTTACTGA
24701 TTTTCTGTTG AGATGATTTG TCTATTGCTG AAGGTAGGGT GTTGAAGTCC
24751 CCTACTATTG CTGTATTGCA GTCTCTCTCT CCTTTCAGAC GTATTAATGG
24801 TTTTTATTTT ATTTTATTTG TTGTTGTTGT TGTGTTGTT GTTGTTTTTG
24851 AGACGGAGTC TCACTCTGTC ACCAGGCTGG AGTGCAGTGG CAGGGTCTCG
24901 GCTCACTGCA GCCCCCGTCT CACGGTTCAA GCGATTCTCC TGCCTCAGCC
24951 TCCCAGAGTCG CTGGGACTAC AGGCGCATGC CACCACGCCC AGCTAATTTT
25001 TGATTTTTTA GTAAAGACGG GGTTCACCA TGTTGGCCAG GATGGTCTTG
25051 ATCTCTTGAC TTCTGATCC ACCCGCCTTG GCCTCCCAA GTGCTGGGAT
25101 TACAGGTGTG AGCCACCACC CCTGGCCAAT GTTTGGTATT TATCTTTAGG
25151 TGCTCTGATG TTGGGTTTCA ATATATTTAT AAAAAACAAT AGCTACATAA
25201 CTTATTAAGG GATATGCAAT ATAAAAATA TAAATTGTGA CACTGAAAAT
25251 TTAAGAGTGG AGGAGTGGAG TAAAAGTACC TTCATATAAC TTACTATTAT
25301 ATCCTCTTAT TGAATTGACC CTTTATCAT TATATAGGAA CTTTGTCTCT
25351 CCTTTACAAC TTCTGACTTA AAGTTTGTTT TATATGATAT AAGTAAAGTT
25401 ACTCCTGCTC TCCTTTGGTT TCTGTTTCCA TGGAAATATCT TTTTCCATTCT
25451 CTTCAACATC AGTCTGTGTG TATTTTTACA GATGAAATGA GTCTGTCATG
25501 GGCAGCATAT AGTTGGATCT AGTTTTTTTA ATCCAATCAG ACACTGTGTT
25551 TTTTGATTGG ATAATTTAAT CCATTCATGT TCAAGGTAAT TATTGATAAG
25601 TAAGGACTTT GTACTACCAT TTTGCTTATT GTTTCATGGT TCTTTTATAG
25651 ATCCTTTTAT CTTTTCTTCC TCTCTTGCTG TCTTTTTTTT GTGGTTAAGT
25701 GATTTTCTCT AGTGGTATGT TTTGATTTCT TGCTTTTTAT TTTTGTGTA
25751 TCTCCTATTG GTTTTTGGTT TGTGGTTACC AAGAGGTTAC AAAAAACATC
25801 TTAAGAGTTA TAATAGTTTA TTTTAACTTG ATAACCTAAT TTTTATTGCA
25851 AAAACCCCCC AAAACAAAAA AATCTACACT TTTACTTAAT CCCCTGAAAT
25901 TTTGAATTTT TGATGTCACA GTTACCTCT TTTTATATTG TGTATCCCTT
25951 AAATTATTGT AGCTATTATT ACTTTTAATA GTTTTCTCTT TCCTACTACA
26001 GATGTAAGTG ATTTGCATAC CATCATTACA GTATTATTTT GAATTTACCT
26051 GTGACTTTTT TTTTATCAGC CAGTTTTATA CTTTCAGATG TTTTGTGTT

FIGURE 31

7
FEB 19 2003
PATENT & TRADEMARK OFFICE

Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

| | | | | | |
|-------|------------|------------|-------------|-------------|-------------|
| 26101 | ACTCATTAGC | ATCTTTTCT | TTCAGCTTGA | GGAGCTCCTT | TTACGTTTCT |
| 26151 | TATAAAATAG | GTGCGGTCAT | GATTATCTCC | CTCAGCTATT | GTTTGTCTGG |
| 26201 | GAAAGTATCT | CTCCTTCATT | TCTGAAGGAC | ACTTTGCTGG | GTACATTACC |
| 26251 | CTTGTTTGGT | ATTTTCTCC | TTGAACGCTT | TAAATATATC | ATCCCTTTCT |
| 26301 | CTCCTGACCT | GTTAGGTCTC | TGCTGACCAG | TCTGTTTCCA | ACCATATTGG |
| 26351 | GACTGTCTTA | TATGTTATTT | GCTTCTTATC | TTTTGCTGTT | TTCAGGATCC |
| 26401 | TCTCATTGTC | TTTGATTTTT | GATAGTTTGA | TTGTAATATG | TCTTGGGGTA |
| 26451 | GTCTTGTTTG | GATTGAATCT | GATTAGAGAC | CTTGGACTTT | TCCTGCATGT |
| 26501 | AGATATTTAC | CTCTTCTCC | AGGTTTGGAA | AATTTTCTGT | TACTGTTTCT |
| 26551 | TTAATTAAGC | TTTTTACCCC | TTTTATCTTC | CTTTTCTCCT | TCTTCAACTC |
| 26601 | CTGTGACTCA | AAACTTTGCT | CTTTTGATGC | TGTTCCATAA | ATCTTGTAAG |
| 26651 | CTTTCTTCAT | TCATTTTCAT | TCTTTTTTCT | CCTCTGTGTA | TTTTCAAATA |
| 26701 | ACCTGTCTTT | GAGTTCATAG | TTTCTTCTT | CTTCTTGATC | ACTTCTGCAG |
| 26751 | TTGATGCTCC | CATATTGCAT | TTTAATTTTG | TTCAATTGAT | TTTTCAGCCC |
| 26801 | CATGATTCT | GTTTGATTTT | TTCTTTTATT | ATTTCATCTC | TTTATTACCT |
| 26851 | TTCTCTTTGT | GGTCACTCGT | TATTTTCTTA | ATTTCAATTGA | ATTGTTTCTT |
| 26901 | TGTATTTTCT | TGAAGTTTGC | TGAGCTTCT | TTGAATTCTA | TGTCAGTTCA |
| 26951 | TACATCTCTG | TTTCTTTAGG | GATGGTCGCT | GGTACTTTAT | TTTGTCTTCT |
| 27001 | TAGTGGTGTC | ATTTGTTTCT | GATTGTTGTT | GATGTTTGTG | GCCTTGTGTT |
| 27051 | TACATCTGTG | CATTTGAAGA | AGTAGGCACT | TATTTCAAGT | TTTGCAGACT |
| 27101 | GGCTTTGTCT | GAGAATGCCC | TTCAACAGTC | AGCCTGTCTA | GAGATTCTTT |
| 27151 | AATATTTAAT | TAAATATCTT | TAATATTTTG | AAGAACTTCC | AAATTGTTTC |
| 27201 | TAAAGTGGCT | GCACCATTTT | ATAATCCCAG | CAGCAATGAA | TGAAGGTTTC |
| 27251 | AGTTTCTCCA | TAGCTATATG | AATACTCATT | ACTGTCTGTC | TTTTCATTTT |
| 27301 | TTGATTTTTA | TTTTTTTTTT | GAGAAAAGGT | CTTGCTCTGT | CATCCCATCT |
| 27351 | GGAGTGCAAT | GGCACAATCA | TGGCTCATTG | CAGCCTCAAC | TTCCCTGGCT |
| 27401 | CAATTGATCC | TCTCACCTCC | TGAGTACCTG | GGACTACAGG | CATTGTACCA |
| 27451 | CAATGCCTGG | CTAATTTTTA | TATTTTTTGT | AGAGATGTGG | TTTTGCCATG |
| 27501 | TTGCCTGGTG | TATTAGTCCA | TTCTCATGCT | GCTATAAAGA | ACTGCCTGAG |
| 27551 | ACTGGGTAAT | TTATAAAGGA | AAGAGGTTTA | ATTGACTCAC | TTTTGCTTGG |
| 27601 | CTGAGGAGCC | CTCAGGAAAC | TTACAATCAT | GGTGAAGGGG | GAAGCAAACA |
| 27651 | CGTCTTCTT | CACATGATGG | CAGGAAGAGC | AGTGCCTAGC | AAAGAGGGAA |
| 27701 | AAAAACCTT | ATAAAATAAT | CAGATCTCAT | GAGAAGTTAC | TCACTATCAT |
| 27751 | GAGAACATCA | GAATGAGGGT | AGCCTCCTCC | ATGATTCAAT | TACCTCCAC |
| 27801 | TGGGTCCCTC | ACGTGACATG | TGGGGATTAT | TGGAECTATA | ATTCAAAATG |
| 27851 | AGATTTGGGT | GAGGACACAG | CCAAACCATA | TCATTTTTCG | CCTGGTCCCT |
| 27901 | CCCAAATCCC | ATGTTCTCAC | ATTGCAAAAC | ACAATAATGC | CTTCCAGCA |
| 27951 | GTCCCCCAGC | GTCTTAATC | ATTCCAGCGT | TAACCTAAAA | GTCCAAGGTT |
| 28001 | TCATCAGAGA | CAAGGCAAGT | CCCTTCTGCC | TATAAGCCTG | TAAAATCAAA |
| 28051 | AGCAAGGTAG | TTATTATACT | TCCTAGATAC | AATGAGGGTA | CAGGCATTGA |
| 28101 | TTAAATATAC | TTGTTCCAAA | TGGGAGAAAT | TGGCCAAAAT | GAAGGGGCTA |
| 28151 | CAGGCCCCAA | GTAAGTCCGA | AATCTAGTGG | AATAGTCAAA | TCTTAAAGCT |
| 28201 | CCAAAATGAT | CTCCTTTGAC | TCCACATCAC | ACATCCAGCT | CATGCTAATG |
| 28251 | CAAGAAGTGG | GCTCCCATGG | CCTTGGGCAT | CTGCACTCCT | GTGGCTTTTC |
| 28301 | AGGGTACAGA | CCCCCTTCTG | GCTCTTTTCA | CAGGCTGGCG | TTGAGTGTCT |
| 28351 | GTGGCTTTTC | CAGGTGCATG | GTGCAAGCTG | TCGGTGGATC | TACTATTCTG |
| 28401 | GGTACTGGAG | GATGGTGGCC | CTCTTTTTCAC | AGCTCCACTA | GGCAGTGCTC |
| 28451 | CAGTGGGGAC | TCTGTGTGAA | GGCTCCAACC | CCACATTTCC | CTTCTGCACT |
| 28501 | GCCCTAGCGG | AGGTTCTCCT | CAAGGGCTCC | ACCCCTGCAG | CAAACCTTCTG |
| 28551 | TCTGGACATC | CAGGCATTTT | CATACATCCT | CTGAAATCTA | GGCAGAGGAT |
| 28601 | CTCAAACCTT | AATCTTATC | TTCTGTGTAC | CCGCAGACTC | AACACCTTGT |
| 28651 | GGAAGCTGCC | AGGGCTTGGG | GCTTGCACTT | TCTGAAGCCA | TGGCCTGAGC |
| 28701 | TGTACCTTGG | CTCCTTTTAG | CCATGGCTGG | GATGCAGGGC | ACCAAGTCCT |
| 28751 | GAGACTGCAC | AAAGCAGCAA | GGCCCTGGGC | CTGGCCAGG | AAACCATTTT |
| 28801 | TTCTCTCTGG | GCCTCTGGGC | CTATGATGGG | AGGGCCCTTC | CTGAAGACCT |
| 28851 | CTGAAGTGCC | CTGGAGGCAT | TTTCCCCATT | GTCTTAGTGA | TTAACATTTT |
| 28901 | ACTCCTTGTT | TCTTATGCAG | ATTTCTGCAG | CTGGCTTGAA | TTTTTCTCTC |
| 28951 | AGAAAATAGA | TTTTTCTTTT | CTGTCACATC | ATCAGGGTGC | AAATTTGACA |

FIGURE 3J

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Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

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FEB 24 2003
TECH CENTER 1600/2900

| | | | | | |
|-------|--------------|------------|-------------|-------------|------------|
| 29001 | AAC TTTTGTCT | CTCTGCTTCC | TGTGGAATGC | TTTGCCACTT | AGAAATTTCT |
| 29051 | TCTGCCTGAT | ACCCCAAATC | ATCTCTCTTA | GGTTCAAAGT | TCCACAGATC |
| 29101 | TCTAGGGCAG | GGGCAAAAAG | CCACCAAGTCT | CTTTGCTATA | GCATAACAAG |
| 29151 | AGTCATCTTT | GCTCCAGTTC | CCAACAAGTT | CCTCATCTCC | ATCTGAGATC |
| 29201 | ATCTCAGCCT | GGACTTCATT | GCCCATATTA | CTGTCAGCAT | TTTGGTCAAA |
| 29251 | GCAATTCAAC | AAGTCTCTGG | GAAC TTACAA | ACTTTCCAC | CTCTTTTGT |
| 29301 | CTTCTGAGCT | CTCCAAATTT | TTAAGAAGTT | CCAAACTTTC | CCAGTCTTCT |
| 29351 | TCTGAACCTT | CCTAACTGTT | CCAACCTCTG | CCTGTTACCC | AGTTCCAAAG |
| 29401 | TCAGTTCCAT | ATTTTTGGGT | ATCCTTATAG | TAGCACCCAA | CTCCTAGTAC |
| 29451 | CAATTTACTG | TATTAGTTCA | TTCTCACGCT | GCTATAAAGA | ACCACCTGAG |
| 29501 | AATGGGTATT | TTATAAAGGA | AAGAGGTTTA | ATTGACTCAC | AGTTTCGCGT |
| 29551 | GGCTGGGGAG | GCCTCAGATA | ACTTACAGCC | ATAGCAGAAA | GGGAAGCAAA |
| 29601 | CATGTCCTTC | ACATGGTGGC | AGGAAGAAGA | AGTGCTGAGC | AAAGAGGGAA |
| 29651 | AAGCCCTATA | AAACCATCAT | ATCTCGTGAG | AACTCACTCA | CTATCATGAG |
| 29701 | AACAGCAGCA | TGGGGTTGAC | CACCCCCCAT | AATTCAATTA | CCTCCCACCA |
| 29751 | GCTGTCTCCC | GTGACACATG | GAAATTATGG | GAAC TACAAC | TCAAGATGAG |
| 29801 | ATTTGGGTGG | GGACACAGCC | AAACCATATC | ATCTAGGCTG | GTATCGAAAT |
| 29851 | CCTGGGCTCA | AGCAATCCAC | CCACCTTGCC | CTACCAAAGT | GCTGGGATTA |
| 29901 | CAGGCATGAG | CCACCATATC | TGAACTGTCT | TTTGATTTCT | TTTGATTTTA |
| 29951 | ACCATCCATT | GTTTCTGCTT | CTCTAGATAA | CCCTGACTAA | TATATAATTG |
| 30001 | GTATGAAGTG | ATATCTCATG | GCTTTGATTT | ATATTTCTTT | CATGGCTAGT |
| 30051 | GACTTTTTTT | GTACTTTTGG | GATATTGTTA | TTATTATTAT | TATTATTACT |
| 30101 | AGTGTTTATA | CTTCTTCAGT | AAAAGTGTTA | GAAACAATTT | TTAAAGGCAG |
| 30151 | AATGTGACCA | GAGTTTCCTG | TAGTTATATA | ACCATCATGG | ACCTTCCCTC |
| 30201 | AAGTGCTAAG | CCATTAGTGT | TACTCATGTC | ACTCCAAATG | TCAGCTTGTT |
| 30251 | TTCTTCCATT | TCACTGTCTC | TTTGTGTCCC | AAACTTGAAT | TCATGGGAAA |
| 30301 | AACATCTGAA | TGGTGCTTAA | TATGGTTTGG | ATATTTGTCC | CCTCCAAATC |
| 30351 | TCATGTTGAA | ATATGACCTC | CAGTGTTGGA | AGTAGGGACT | ACTTGGGTCA |
| 30401 | CGAGAGTGGA | TCCTTCATTA | ATGGCTTGGT | AATAAGTGAA | CTCTATTAGT |
| 30451 | TCATGAAAGC | TGGTTGTTGA | TAAGAGCCTG | GCATCTCATT | TCTCTTGTC |
| 30501 | TTCTCTCACC | ATCTGACACA | CTTGCTCACC | TTTTTCTTC | AGCCATGAGT |
| 30551 | AAAAGCTTCC | TGAGGTCTCA | CCAGAAACTG | AGCAGATGTT | GGTGCCATGC |
| 30601 | TTGTACAGTC | TGTAGAAGTG | TGAGCCAAAT | AAGCCTCTTT | TCTTTATAAA |
| 30651 | TTACCGAGTC | TCAGGTGTTT | GTTTAAAAACA | ACACAAAACA | GACTAACACA |
| 30701 | GTGTTGATTG | AAACAGCTGT | GACTGGGTCA | TCAGGGTGTA | AGAGAGGAGT |
| 30751 | CACTGAGTTG | AAATATAGCC | TCCTACTTAC | ACCTGTTTCA | TAGAAGCTGT |
| 30801 | AGATATGAAG | TAGCTGAAGC | AGGCATTCCC | TCTGAAACAT | GTGTTTCACA |
| 30851 | TATGTCATAA | TTATCTTCTG | CTCTCATTTT | TCTTTTAGGC | TTTTGTCTCC |
| 30901 | ATCTCATTTT | CCCTGTTTAC | TCTCATTTTC | ATATCTTTAC | ATTTCTTTCT |
| 30951 | CCAGAATTGT | TCAGAAGCTT | GGAACCTTTC | ACTCCAGTTA | TTCTTTGACT |
| 31001 | ATGCAATTTG | TTTCTGTGCT | TCATGGCACT | TATGGTTTGT | AATCCTTGAC |
| 31051 | TTGTTTGTAT | AGCTCAGTGG | TTAGGAGTAC | AGTTTGGAGT | TAGAATGCCT |
| 31101 | GGGTTGAAAC | TCTTAATTCT | ACTCTACTTA | CTAGTCTTGT | GACTATAACA |
| 31151 | AAATTCCTAG | CCTCTCTTTG | TCTGTAAAAT | GGAGAGTATA | GTAATACAT |
| 31201 | GGGCTTGTTT | TAAGGATTAA | ATGAGTTAAC | ATGTGAAATA | CTTAGAACAA |
| 31251 | TGCCTGGCAA | ATGCTCAATG | AATATTGAGT | ATTGCTTGCT | TTTGTTTAGT |
| 31301 | GCCATGCCTG | TTGTTCCAC | TGAGGGCACA | GACCATGTGT | ATCTGGTTAA |
| 31351 | CAGTTCTATG | TCCACCACGT | TGCAATAATG | GACTCTCAGA | AAATATTGAA |
| 31401 | GAATATGTTA | AAGAATGAGT | AGAATTATGC | TACTGAAAAG | GGTGAGTGGA |
| 31451 | AGGTAGGTAG | GGGAAAGGAC | ATATACAGCC | CTGGAGGCAG | CATATATGGG |
| 31501 | GAATGGGTCA | CACAGTGTTT | CTTGGTACTC | TCTAGACCAT | AGTGGGCCAC |
| 31551 | CTCTTAGCTA | TGGGCCTATG | GATTATTTCA | GCAGTCTGTT | GGAAACATCC |
| 31601 | ATGAATATGA | TAATAATGAC | CCATTTGTGG | GTTCTAAGAA | AAAGGACAAC |
| 31651 | TACAATACTA | GACAATAATA | GTATGTAAGT | TAGGAGGGAA | GGGGATGATT |
| 31701 | TGTATTAAAC | TGTTCTAAAA | TTCTTACCTT | ATTTAGGATG | ATGGGGTCAG |
| 31751 | ACATTAACTT | TAGACTTTGT | TATATATATG | TGGTAAAATT | TCAAGGTAAA |
| 31801 | CCATTGAAAC | TGTAGTAGTT | GAGTATATAA | CTTCCAAATC | AGGGGGGAAA |
| 31851 | GAAATGGAAT | AAGAAAATAA | ATACATAAAC | ATAAGATTGA | AACAATCCAA |

FIGURE 3K

FEB 19 2003

PATENT & TRADEMARK OFFICE

Docket No.: CL001103

Serial No.: 09/777,921

Inventors: Gennady MERKULOV et al.

Title: ISOLATED HUMAN TRANSPORTER ...

31901 TGAAGAGTAG AGAGAAGAGG GAAAAACATA GAAAGAATGA GATAATTAGA
31951 AAGCAATAGG TAAGATGTGA GAAATAAATT CAAGTACAGT AAAACTCCAC
32001 TAAAAATGTGC CCTGCAGTAA TGTTGGGGCA TGATTTCCCT TCATCCCCAT
32051 TCTCAAATGG GGCAGCCTAA ATAGCGTTCT TATCCTGTTT CCCTGGGGGT
32101 TTGAGGTGGG TGACGAGTAA GTTAGAAGAT AATCACCTTC TGATCAGTTA
32151 GGACTTTCTC AGTTTAGTCT TCAATTAATA AAAATTAATG TAAATTTTAT
32201 CAGAAGGCAG AGATTGTCAG ATGAAAGAAC AAGCAAAATA AAAGTCTTAC
32251 TGAAAAAAG CTGGGGTAGC TATGTTAATA TCAACTGTTA ATTATTATTA
32301 ATAATCTATT AATAATAGAT TATATAGTAA AAACATTAAT AAAAATAGAG
32351 TGTCACTACA TTTTAAAAAT CAGTATGAGG ATATACAATT TTTAAGCTGG
32401 TTGATAAAAT TCTGGGGATT AATTGGCAAA TCCATCATAG TGGTGAGAGA
32451 TTTTAACACA ATTCTTCTCTG TATTTGATAG GTCAAGCAGA GAAAACTTT
32501 AGTGAAGACA AAAACTTCTA AATACATAAG CTTGATTTAA TGGGCATGTA
32551 ATAGGACCTA GCATCAAAAA ATTAGAAAAA ATATTTTTTC TTAGGTATTT
32601 ATGGAACTAG TATAAAAAAT GATTTCTGAG TAGGCCATAA AGCCAGGTTT
32651 AACACATTTT AAAGAACTGG TATCACAAGA ACTGCTTTCT CTGACCACTA
32701 TGCATTAAAA TAGAAGTTAA TTACAGACAT AAATTATAAA AATGCCAATA
32751 TTTTAAAGTG TGATATACAC TTCTCAACTT ATGGGTCAAA GGAAATCGTA
32801 AGTGGAAATT CAAGGACACG TTGACTTGAA AACATTAAAA CTTATGGAAT
32851 ATTTCTAAGA TGGAACTTGT ATGAATTTTA TAGTCTGAAA GCTTTTATTA
32901 GAAAAAAGTT AAGTCTGAAA ATTAATGTGC TAAGTTAGGG GAGAGAAAAT
32951 GGAATAATCT CGAAGAAGGT AGGAGGAAGG AGATAATAAA GAATATATAG
33001 CAAAGATGCA GTAACAGGAT CAACAAAGCC AGAACTGTT GGAAAAGACA
33051 AGCCTCTGGA AAGATTGATG AAGAAAAAAG AGAAATGAGA TGTAATAATA
33101 TCATGTTTCA TTATAAATAG GCACATAAGG ACTTTTAAAA AACTAATAAA
33151 ATAATATGAA TCATTAATGC CAATAAATTT GAAAAACAGC AAAGTAGGTG
33201 AATTTCTAGA AAAATATAAC TTACTGGGAC TGAATGAAGA AGCAACAGCT
33251 TATTAGTACCT AAGCAATTGA AGAGATTGGG TCAGTAATTT AAAATTTTCT
33301 CATAAACAAA ACGTTAGCCC CAGATGGTTC TTGCAAATGA TTAAAGAACA
33351 GATGTACAAA CATTTCCAGA GTGTAGAAGT AACTGTCTCT ATCCTTTCTA
33401 GGAGATCATT ATAACACCAA AAGCAGACAG TATATGAAAC AGGGAAATTA
33451 GAGGCCAAGA TACCTATGAC TTATATGTAA AAATTTAAAG AAAATATTAG
33501 CAACTGAAT CAGCCATTTT AAAAAATATA CCACAATCAA TGCATTCTA
33551 AGAGCAGCTT AACAAAATTT GTTAGAAGGC ATTAAGAAG ACTCAGTATA
33601 GAAAAGATGT ACCTTCTCTC CAAATTGGTG ATAGAGATTG AATGCCATTA
33651 AAAAAACCCA CCTGGTTTTT TTGAGGAACT TGTCAAGCTG AGTCTCAAAT
33701 TTATATCAAA GAGCAAAGGC CTAAGAATAT CCAGGACATT CCTGAAGAAC
33751 TGTAAGGAGC CAGGGGCTTG CCCTATCAGA TACCAAGGGT TGTTATTAAG
33801 CCATAACCAA GTCAGTGTG TTTCTACAGA AACAGACAAG TTAACAAGTG
33851 AAACATAATA GAGAGCCCAG AAACAGACCC ATCCATATTT TGGATTTGTC
33901 ACGTGAAAGA AGTAGCTTTG CAAAACTTTG GGAAAAGGAG AGTGTGTGCA
33951 ATAGATGATG CTCGTGCTCA TGCAGACAAA AAGGAAATTG GGATACCTGC
34001 CTCTTACCGT ACACAAACAC CAACCTAAAC GTGAAAGTTA AACTATAACA
34051 GCTTGAGGTG GTGGGAAGA AATATCTTTA TCTCAGTGTG GGGAAGAATT
34101 TATTTTAAAA AGAAGACACA AAAGGCCATA CATAGGAATG AAAAGATTGA
34151 ATTCAGCTGC ATTAATAAGA TTAAATTCAG CTGCGTTAAA ATCAAGAGCA
34201 TCTGTACTTG GACAGCATAG AGTGGAAGA CAAAGAGAAG GTATTTGCCA
34251 GCTTATAACT TGAAGGATTA GAATGAATGA TATAAAGAAC TATGTAAATA
34301 AGAAAAAGAC ATACAACCGG TTAGAAAAAC GGGCAAAGAC ATGAACAGCA
34351 TATTTACAGT GAAGGAAACA GCGGTAGCAA ATGAACATGG TAAGAGATGC
34401 TCAACACGTT TAGTAATTTG AAGGGAAATG CAAGTTATAC CCACAGCAAG
34451 ACTATCTTAT CTAGGAAGTT TGTCATAACC TCAAATGTTT TGTGGTTTTA
34501 AGCTACAGAG TTTGTAATTC ATTTATTTAT TCAATAAATA CTCAGTGGCA
34551 GGCACTGTTT TAGAAACCTT GGTATAACT TTGAATGAAA TTAACAAAAA
34601 TCCTTGCTT GTGGAGGATG CTTATGTGTG GGGAGTTGGG TGGTGGGGTC
34651 AAACAACAAT TACATTAATA TAGAAAAATG TGACATAAAT AAACCTATAA
34701 ATATTGCAAC CCAGAGTTAT ATTATAAATG TAAGTAGTGA CTAGGACTCT
34751 CATGCAGATA TACCTCTGTG CTGGGACAAA TGAAAGTTTA AGTGTAAATT

FIGURE 3L



Docket No.: CL001103

Serial No.: 09/777,921

Inventors: Gennady MERKULOV et al.

Title: ISOLATED HUMAN TRANSPORTER ...

| | | | | | |
|-------|-------------|------------|-------------|-------------|-------------|
| 34801 | CCCATATGCA | AGTCAAAATA | AAAAGTGACA | CTAGAAAACA | CAATAATGAA |
| 34851 | TATCTGAAAA | TTGCATTTTA | TTTGACTGCC | ATCCTTTTGC | ATCATTTTCA |
| 34901 | TACTAATTAT | AGAATAAAAT | TTGTAGGATG | CACCAAAGCT | TTTTTTAGAG |
| 34951 | ACATCCATTA | ATTCAATAAA | TAAATGAGCA | CCTTCTTTGT | GCCAGCAGCT |
| 35001 | GTAAGAGGTG | GCCCAAGGAA | GGAATAAAAA | CAGTCAAAAT | CCTGGTACAC |
| 35051 | TCAGAGTTTC | TCTTAGGAGA | AAACAGATAC | AAATGGCATT | AATTACCAAG |
| 35101 | AAACTTGTAA | AACAAGCCAA | ATATTAATGA | TAAATATTTG | AGTACAGTAT |
| 35151 | GTTAATTTTA | AGATTGAAAA | TGAGGTGCCA | GGATTTCTTA | AGACTCAAAG |
| 35201 | GCGAAGATGG | CTGAATAGGA | ACAGCTCTGG | TCTACAGCTC | CCAGCGTGAG |
| 35251 | CGACGCAGAA | GACGCATGAT | TGCTGCATTT | CCATCTGAGG | TACCGGGTTC |
| 35301 | ATCTCACTAG | GGAGTGCCAG | ACAGTGGGCG | CAGGTCAGTG | GGTGTGTGCA |
| 35351 | CCGTGCGCGA | GCTGAAGCAG | GGCGAGGCAT | TGCCTCACTC | GGGAAGTGCA |
| 35401 | AGGGGTCAGG | GAGTTCCTTT | TCCTAGTCAA | AGAAAGGGGT | GACAGATGGC |
| 35451 | ACCTGGAAAA | TCGGGTCACT | CCCACCTGAA | TACTGCACTT | TTCTGACGGG |
| 35501 | CTTAAAAAAT | GCGGCACCAG | GAGATTATAT | CCTGCACCTG | GCTCGGAGGG |
| 35551 | TCCTACACCC | ACGGAGTCTC | GCTGATTGCT | AGCACAGCAG | TCTGAGATCA |
| 35601 | AACTGCAAGG | CGGCGGCGAG | GCTGGGGGAG | GGGCACCCGC | CATTGCCCAG |
| 35651 | GCTTGCTTAG | GTAACAACAA | CAGCCGGGAA | GCTCAAACCTG | GGTGGAGCCC |
| 35701 | ACCACAGCTC | AAGGAGGCCT | GCCTGCCTCT | GTAGGCTCCA | CCTCTGGGGG |
| 35751 | CAGGGCACAG | ACAAACAAAA | AGACAGCAGT | AACCTCTGCA | GACTTAAATG |
| 35801 | TCCCTGTCTG | ACAGCTTTGA | AGAGAGCAGT | GGTTCTCCCA | GCACGCAGCT |
| 35851 | GGAGATCTGA | GAACGGGCAG | ACTGCCTCCT | CAAGTGGGTC | CCTGACCCCT |
| 35901 | GACGCCCCGAG | CAGCCTAACT | GGGAGGCACC | CCCCAGCAGG | GGCACACTGA |
| 35951 | CACCTCACAC | AGCCGGTTAC | TCCAACAGAC | CTGCAGCTGA | GGGTCTGTCT |
| 36001 | TGTTAGAAGG | AAAACATAAC | AACAGAAAGG | ACATCCACAC | CAAAAACCCA |
| 36051 | TCTGTACATC | ACCATCATCA | AAGACCAAAA | GTAGATAAAA | CCACAAAGAT |
| 36101 | GGGGAAAAAA | CAGAGCAGAA | AAACTGGAAA | CTCTAAAAAG | CAGAGTGCCT |
| 36151 | CTCCTCTCC | AAAGGAACGC | TGTTCTCAC | CAGCAACGGA | ACAAAGCTGG |
| 36201 | ATGGAGAATG | ACTCTGACGA | GCTGAGAGAA | GGCTTCAGAC | GATCAAATTA |
| 36251 | CTCTGAGCTA | TGGGAGGACA | TTCAAACCAA | AGGCAAAGAA | GTTGAAAACCT |
| 36301 | TTGAAAAAAA | TGTAGAAGAA | TGTATAACTA | GAATAACCAA | TACAGAGAAG |
| 36351 | TGCTTAAAGG | AGCTGATGGA | GCTGAAAACC | AAGGCTCGAG | AACTACATGA |
| 36401 | AGAATGCAGA | AGCCTCAGGA | GCTGATGCGA | TCAACTGGAA | GAAAGGGTAT |
| 36451 | CAGCGATGGA | AGATGAAATG | AATGAAATGA | AGCGAGAAGG | GAAATTTAGA |
| 36501 | GAAAAAAGAA | TAAAAAGAAA | CGAGCAAAGC | CTCCAAGAAA | TATGGGACTA |
| 36551 | TGTGAAAAGA | CCAAATCTAT | GTCTGATTGG | TGTACCTGAA | AGTGACGGGG |
| 36601 | AGAATGGAAC | CAAGTTGGAA | AACACTCTGC | AGGATATTAT | CCAGGAGAAC |
| 36651 | TTCCCCAATC | TAGCAAGGCA | GGCCAACATT | CAGATTCAGG | AAATACAGAG |
| 36701 | AACGCCACAA | AGATACTCCT | TGAGAAGAGC | AACCTCAAGA | CACATAATTG |
| 36751 | TCAGATTAC | CAAAGTTGAA | ATGAAGGAAA | AAATGTTAAG | GGCAGCCAGA |
| 36801 | GAGAAAGGTC | GGGTTACCCT | CAAATGGAAG | CCCATCAGAC | TAACAGCGGA |
| 36851 | TCTCTTGCCA | GAAACTCTAC | AAACCAGAAG | AGAGTGGGGG | CCAATATTCA |
| 36901 | ACATTCTTAA | AGAAAAGAAT | TTTCAACCCA | GAATTTTATA | TCCAGCCAAA |
| 36951 | CTAAGCTTCA | TAAGTGAAGG | AGAAATAAAA | TCCTTTACAG | ACAAGCAAAT |
| 37001 | GCTGAGAGAT | TTTGTACCCA | CCAGGCCTGC | CCTAAAAGAG | TTCTGAAGG |
| 37051 | AAGTGCTTAA | CTTGGAAGG | AACAATCAGT | ACCAGCCGCT | GCAAAATCAT |
| 37101 | GCCAAAATGT | AAAGACCGTC | GAGACTAGGA | AGAACTGCA | TTAACAAACG |
| 37151 | AGCAAAATAA | CCAGCTAACA | TCATAATGAC | AGGATCAAAT | TCACACATAA |
| 37201 | CAATATTAAC | TTTAAATGTA | AATGGACTAA | ATGCTCCAAT | TGAAAGACAC |
| 37251 | AGACTGGCAA | ATTGGATACA | GAGTCAAGAC | CCATCAGTGT | GCTGTATTAA |
| 37301 | GGAAAACCCAT | CTACCAAGTA | GAGACACACA | TAGGCTCAAA | ATAAAAAGGAT |
| 37351 | GGAGGAGAT | CTACCAAGCA | AATGGAAAAAC | AAAAAAAAGAC | AGGGGTTGCA |
| 37401 | ATCCTAGTCT | CTGATAAAAC | AGACTTTAAA | CCAACAAAGA | TCAGAAGAGA |
| 37451 | CAAAGAAGGC | CATTACATAA | TGGTAAAGGG | ATCAATTCAA | CAAGAAGAGC |
| 37501 | TAACTATCCT | AAATATATAT | GCACCCAATA | CAGGAGCACC | CAGATTCTAA |
| 37551 | AAGCAAGTCC | TGAGTGACCT | ACAAAGAGAC | TTAAACTCCC | ACACATTAAT |
| 37601 | AATGGGAGAC | TTTCACACCC | CACTGTCAAC | ATTAGACAGA | CCAATGAGAC |
| 37651 | AGAAAGTCAA | CAAGGATACC | CAGGAATTGA | ACTCAGCTCT | GCACCAAGCA |

FIGURE 3M



| | | | | | |
|-------|-------------|-------------|-------------|-------------|-------------|
| 37701 | GACCTAATAC | ACATCTACAG | AACTCTGCAC | CCCAAATCAA | CAGAATATAC |
| 37751 | ATTTTTTTTCA | GCACCACACC | ACGGCTATTTC | CAAAATTGAC | CACATACTTG |
| 37801 | GAAGTAAAGC | ACTCCTCACC | AAATGTAAAA | GAACAGAAAT | TATAGCAAAC |
| 37851 | TATCTCTCAG | ACCACAGTGC | AATCAAACCTA | GAACCTCAGGA | TTAAGAATCT |
| 37901 | CACTCAAAAC | CGCTCAACTA | CATGGAAACT | GAACAACTG | CTCCTGAATG |
| 37951 | ACTACTGGGT | ACATAACGAA | ATGAAGGCAG | AAATAAAGAC | GCTCTTTGAA |
| 38001 | ACCAACAAGA | ACAAAGACAC | AACATACCAG | AATCTCTGGG | ACGCATTCAA |
| 38051 | AGCAGTGTGT | AGAGGGAAAT | TTATAGCACT | AAATGCCAC | AAGAGAAAGC |
| 38101 | AGGAAAGATC | CAAAATTGAC | ACCCTAACAT | CACAATTTAA | AGAACTAGAA |
| 38151 | AAGCAAGAGC | AAACACATTTC | AAAAGCTAGC | AGAAGGCAAG | AAATAACTAA |
| 38201 | AATCAGAGCA | GAACCTGAAGG | AAATAGAGAC | ACAAAAAAC | CTTCAAAAA |
| 38251 | TTAATGAATC | CAGGAGCTGG | TTGTTTTTGA | AAGGATCAAC | AAAATTGATA |
| 38301 | GACCGCTAGC | AAGACTAATA | AAGAAAAAA | GAGAGAAGAA | TCAAATAGAC |
| 38351 | ACAATAAAAA | ATGATAAAGG | GGATATCACC | ACCAATCCCA | CAGAAATACA |
| 38401 | AATCAACATC | AGAGAATACT | ACAAACACT | CTATGCAAAT | AAACTAGAAA |
| 38451 | ATCTAGAAGA | AATGGATAAA | TTCCTCGACA | CATACACCCT | CCCAAGACTA |
| 38501 | AACCAGGAAG | AAGTTGAATT | TCTGAATAGA | CCAATAACAG | GATCTGAAAT |
| 38551 | TGTGGCAATA | ATCAATAGCT | TACCAACCAA | AAAGAGTCCA | GGACCAGATG |
| 38601 | GATTCACAGC | CGAATTCTAC | CAGAGGTACA | AGGAGGAACT | GGTACCATTTC |
| 38651 | CTTCTGAAAC | TATTCCAATC | AATAGAAAA | GAGGGAATCC | TCCCTAACTC |
| 38701 | ATTTTATGAG | GCCAGCATCA | TCCTGATACC | AAAGCCAGGC | AGAGACACAA |
| 38751 | CAAAAAAAGA | GAATTTTAGA | CCAATATCCT | TGATGAACAT | TGATGCAAAA |
| 38801 | ATCCTCAATA | AAATACTGGC | AAACTGAATC | CAGCAGCACA | TCAAAAAGCT |
| 38851 | TATCCACCAT | GATCAAGTGG | GCTTCATCCC | TGGGATGCAA | GGCTGGTTCA |
| 38901 | ATATACGCAA | ATCAGTAAAT | GTAATCCAGC | ATATAAACAG | AACCAAAGAC |
| 38951 | AAAAACCACA | TGATTATCTC | AATAGATGCA | GAAAAAGCCT | TTGACAAAAT |
| 39001 | TCAACAACAC | TTCATGCTAA | AAACTTTCAA | TAAATTAGGT | ATTGATGGGA |
| 39051 | TGTATCTCAA | AATAATAACA | GCTATCTATG | ACAAACCCAC | AGCCAATATC |
| 39101 | ATACTGACTG | GGTAAAAACT | GGAAGCATTTC | CCTTTGAAAA | CTGGCACAAG |
| 39151 | ACAGGGATGC | CCTCTCTCAC | CACTCCTATT | CGACATAGTG | TTGGAAGTTC |
| 39201 | TGGCCAGGGC | AGTTAGGCAG | GAGAAGGAAA | TAAAGGGTAT | TCAATTAGGA |
| 39251 | AAAGAGGAAG | TCAAATTGTC | CCTGTTTGCA | GACGACATGA | TTGTATATCT |
| 39301 | AGAAAACCCC | ATTGTCTCAG | CCCAAAATCT | CCTTAAGCTG | ATAAGCAACT |
| 39351 | TCAGCAAAGT | CTCAGGATAC | AAAATCAATG | TACAAAAATC | ACAAGCATTTC |
| 39401 | TTATACACCA | GCAACAGACA | GAGAGCCAAA | TCATGAGTGA | ACTCCCGTTC |
| 39451 | ACAATTGCTA | CAAAGAGAAAT | AAAATACCTA | GGAATCCAAC | TTACAAGGGA |
| 39501 | TGTGAAGGAC | CTCTTCAAGG | AGAACTGCAA | ACCACTGCTT | AATGAAATAA |
| 39551 | AAGAGGATAC | AAGCAAAATG | AAGAACATTTC | CATGCTCATG | GGTAGGAAGA |
| 39601 | ATCAGTATCG | TGAAAATGGC | CATACTGCCC | AAGGCAATTT | ACAGATTCAA |
| 39651 | TGCCATCCCC | ATCAAGCTAC | CAATGACTTT | CTTCACAGAA | TTGGAAAAAA |
| 39701 | CTACTTTAAA | GTTTCATATGG | AACCAAAAAA | GAGCCCGCAT | TGCCAAGTCA |
| 39751 | ATCCTAAGCC | AAAAGAACAA | AGCTGGAGGC | ATCATGCTAC | CTGACTTCAA |
| 39801 | ACTATACTAC | AAGGCTACAG | TAACCAAACC | AGCATGGTAC | TGGTACCAAA |
| 39851 | ACAGAGATAT | AGACCAATGG | AACAGAACAG | AGCCCTCAGA | AATAACGCCG |
| 39901 | CACATCTACA | ACTATCTGAT | CTTTGACAAA | CCTGAGAAAA | ACAAGCAATG |
| 39951 | GGGAAAGGAT | TCCCTATTTA | ATAAATGGTG | CTGGGAAAAAC | TGGCTAGCCA |
| 40001 | TATGTAGAAA | GCTGAAACTG | GATCCCTTCC | TTACACCTTA | TACAAAAATC |
| 40051 | AATTCAAGAT | GGATTAAAGA | CTTAAACGTT | AGACCTAAAA | CCATAAAACC |
| 40101 | CCTAGAAGAA | AACCTAGGCA | TTACCATTCA | GGACATAGGC | ATGGGCAAGG |
| 40151 | ACTTCATGTC | TAAACACCA | AAAGCAATTG | CAACAAAAGC | CAAAATTGAC |
| 40201 | AAATGGGATC | TAAATAAACT | AAAGAGCTTC | TGCACAGCAA | AAGAAACTAC |
| 40251 | TATCAGAGTG | AACAGGCAAC | CTCCAAAATG | GGAGAAAAAT | TTTGCAACCT |
| 40301 | ACTCATCTGA | CAAAGGGCTA | ATATCCAGAA | TCTACAATGA | ACTCAAACAA |
| 40351 | ATTTACAAGA | AAAAAAACAA | ACAACCCTAT | CAAAAAGTGG | GTGAAGGACA |
| 40401 | TGAACAGACA | CTTCTCGAAA | GAAGACATTT | ATGCAGCCAA | AAAACACATG |
| 40451 | AAAAAATGCT | CACCATCACT | GGCCATCAGA | GAAATGCAAA | TCAAAACCAC |
| 40501 | AATGAGATAC | CATCTCACAC | CAGTTAGAAT | GGCAATCATT | AAAAAGTCAG |
| 40551 | GAAACAACAG | GTGCTGGAGA | GGATGTGGAG | AAATAGGAAC | ACTTTTACAC |

FIGURE 3N



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| | | | | | |
|-------|-------------|-------------|-------------|-------------|-------------|
| 40601 | TGTTGGTGGG | ACTGTAACCT | AGTTCAACCC | TTGTGGAAGT | CAGTGTGGCA |
| 40651 | ATTCCTCAGG | GATCTAGAAC | TAGAAATATC | ATTTGACCCA | GCCATCCCAT |
| 40701 | TACTGGGTAT | ATACCCAAAG | GACTATAAAT | CATGCTGCTA | TAAAGACACA |
| 40751 | TGCACATGTA | TGTTTATTGT | GGCACTATTG | ACAATAGCAA | AGACTTGGAA |
| 40801 | CCAAGCCAAA | TGTCCAACAA | TGATAGACTG | GATTAAGAAA | ATGTGGCACA |
| 40851 | TTTACACCAT | GGAATACTAT | GCAGCCATAA | AAGATGAGTT | CATGCTTTTT |
| 40901 | GTAGGGACAT | GGATGAAATT | GGAAATCATC | ATTCTCAGTA | AACTATCACA |
| 40951 | AGAACAAAAA | ACCAAACACC | GCATATTCTC | ACTCATAGGT | GGGAATTGAA |
| 41001 | CAGTGAGAAC | ACATGGACAC | AGGAAGGGGA | ACATCACACT | CTGGGGACTG |
| 41051 | TTGTGGGGTG | GGGGGAGGGG | GAGGGATGGC | ATTGGGAGAT | ATACCTAATG |
| 41101 | CTAGATGACG | AGTTAGTGGG | TGCAGCGCAC | CAGCAAGGCA | CATGTATACA |
| 41151 | TATGTAACCTA | ACCTGCACAT | TGTGCACATG | TACCCTAAAA | CTTAAAGTAT |
| 41201 | AATAATAAAA | AAAAAAGACT | CAAAGGCACA | GTCACCTGACA | GTTTGATTTT |
| 41251 | TTATAATAGC | TGTTAATTTT | CCTAACTTCG | AGGAAGTTGA | TAGCATGTTT |
| 41301 | TGAGTATATT | TCAAAACTAC | ATTCAAATGT | TGCAATAGAA | CATTAAGAAT |
| 41351 | TATCTTCATG | ATCCACTAAG | TGCATGAAAA | AAATGGATAA | TGAATCTATT |
| 41401 | CATTACCATC | GTTTAATATT | TTATCTTCAA | GTTTTTGTGT | TTTGTAGCTC |
| 41451 | ATTGGCAGAG | TTTGACAGAG | TGCTGAAAGT | ATTCTTTAGT | GAGCTGGCTG |
| 41501 | TAATTTTTTG | GCCCCATTTT | ATCTAGATAA | TTAAAACTAT | CTGACAGGAC |
| 41551 | CATAAAATGC | TTGCTGCCAT | TTCCAACAAC | CTATATTTGT | GGATGGGGTT |
| 41601 | TTTTAATTTA | ATGAGAATAT | TATGTTAGAA | AAGAACTGT | CATTCTGTAA |
| 41651 | AGTGGCCAAT | AATGTTAGTT | TTATTTATCA | ATTTAGTTTT | GTACTTTGAT |
| 41701 | CATTTTTTTA | AAATTTTCAGC | ATTGATGTTG | ATGGGACAAT | GACAGTGGAC |
| 41751 | TGGAATGAAT | GGAGAGACTA | CTTCTTATTT | AATCCTGTTA | CAGACATTGA |
| 41801 | GGAAATTATC | CGTTTCTGGA | AACATTCTAC | AGTAAGTCTA | CTTTATGTAT |
| 41851 | TTATACTTAT | TTGGAGCTAT | AAACCATAGG | TACAGTTATC | ACCCAAGAAC |
| 41901 | ACTCTGTAAC | ACTTATGGGC | CAGGATACCT | GAGTCCCAGT | AGCTCCTTAA |
| 41951 | CCTGTAGAGT | TCTATTTATT | CTATTAGGCA | TAGATTTATA | GAGTATTAAA |
| 42001 | CAAAAAAAAAA | CAGCTCTCCC | TCTCCCTCTC | CCTCTCTCTC | CCCCCTCCCCA |
| 42051 | CGGTCTCCCT | CTCCCTCTCT | TTCCACGGTC | TCCCTCTGAT | GCCGAGCCAA |
| 42101 | AGCTGGACTG | TACTGCTGCC | ATCTCGGCTC | ACTGCAACCT | CCCTGCCTGA |
| 42151 | TTCTCCTGCC | TCAGCCTGCC | GAGTGCCTGC | GATTGCAGGC | GCGCACCGCC |
| 42201 | ACGCCTGACT | GTTTTTCGTA | TTTTTTTGGT | GGAGACGGGG | TTTCGCTATG |
| 42251 | TTGGCCGGGC | TGGTCTCCAG | CTCCTGACCG | CGAGTGATCC | ACCAGECTCG |
| 42301 | GCCTCCCGAG | GTGCTGGGAT | TGCAGACGGA | GTCTCGTTCA | CTCAGTGCTC |
| 42351 | AATGGTGCCC | AGGCTGGGGT | GCAGTGGCAT | GATCTCGGCT | CGCTACAACC |
| 42401 | TCCACCTCCC | AGCCGCCTGC | CTTGGCCTCC | CAAAGTGCCA | AGATTGCAGC |
| 42451 | CTCTGCCCAG | CCGCCACCCC | GTCTGGGAAG | TGAGGAGCGT | CTCTGCCTGG |
| 42501 | CCGCCCATCG | TCTGGGATAT | GAGGAGCCCC | TCTGCCCTGG | TGCCCAGTCT |
| 42551 | GGAAAGTGAG | GAGTGTCTCT | GCCCGGCCGC | CATCCTGTCT | AGGAAGTGAG |
| 42601 | CGTCTCTGCC | CGGCCGCCCA | TCGTCTGGGA | TGTGAGGAGC | CCCTCTGCCT |
| 42651 | GGCTGCCCAG | TCTGGAAAGT | GAGGAGCGCC | TCTTCCCGGC | CGCCATCCCA |
| 42701 | TCTAGGAAGT | GAGGAGCGTC | TCTGCCCGGC | CGCCCATCGT | CTGAGATGTG |
| 42751 | GGGAGCGCCT | CTGCCCCGCC | GCCCCGCTCTG | GGATGTGAGG | AGCGCCTCTG |
| 42801 | CTCGGCCGCC | CCGTCTGAGA | AGTGAGGAGA | CCCTCCGCCC | GGCAGCCGCC |
| 42851 | CCGTCTGGGA | AGTGAGGAGC | GTCTCCGCCC | GGCAGCCACC | CTGTCCGGGA |
| 42901 | GGGAGGTGGA | GGGGTCAGCC | CCCCGCCCGG | CCAGCCACCC | CATCCGGGAG |
| 42951 | GTGAGGGGTG | CCTCTGCCCG | GCCGCCCTTA | CAGGGAAGTG | AGGAGCCCCT |
| 43001 | CTGCCCGGCC | ACCACCCCAT | CTGGGAGGTG | TACCCAACAG | CTCATTGAGA |
| 43051 | ACGGGCCATG | ATGACAATGG | CGTTTTTGTG | GAATAGAAAA | AGGGGAGAGG |
| 43101 | TGGGGAAAAA | ATTGAGAAAT | CGGATGGTTG | CTGTGTCTGT | GTAGAAAGAG |
| 43151 | GTAGACATGG | GAGACTTTTC | ATTTTGTTC | GTAATAAGAA | AAATTTCTCT |
| 43201 | GCCTTGGGAT | CCTGTTGATC | TATGACCTTA | CCCCCAACCC | TGTGCTCTCT |
| 43251 | GAAACATGTG | CTGTGTCCAC | TCAGGGTTAA | ATGGATTAAAG | GGCGGTGCAA |
| 43301 | GATGTGCTTT | GCTAAACAGA | TGCTTGAAGG | CAGCAGGCTC | GTTAAGAGTC |
| 43351 | ATCACCCTC | CCTAATCTCA | AGTACCCAGG | GACACAAACA | CTGCGGAAGG |
| 43401 | CCGACGGGTC | CTCTGCCTAG | GAAAACCAGA | GACCTTTGTT | CACTTGTTTA |
| 43451 | TCTGCTGACC | TTCCCTCCAC | TATTGTCTCTG | TGACCCTGCC | AAATCCCCCT |

FIGURE 30



Docket No.: CL001103

Serial No.: 09/777,921

Inventors: Gennady MERKULOV et al.

Title: ISOLATED HUMAN TRANSPORTER ...

43501 CTGCGAGAAA CACCCAAGAA TGATCAATTA AAAAAAAAAA AAAAAAACA
43551 ACCCAAGACT GCATAAATGT CCATTCTGAA AACTTGGAAG AAGTACCACC
43601 TTGATGAATA AGCTGTCTAG CTTTTATTGG CATTTAAGTA TTCTGCCATA
43651 GGGGAAGTGTA AAAGTTGTAG GCTTTTACTT TTTATAGGTA CTATATTGTC
43701 CAAATAATCT CAGCACCTCA TGGTTGCTAA GGATCTGTGT CCTTGTTTGG
43751 TCAGATTATG TTTATCTCTG GCATAAGGCA CTTAACAATA TTCATTAAAG
43801 GTTACAGAAT CTTTTTGCTT CATCTGCTTA GCATTTTATA CCAGTTTGTT
43851 TTCCACCAAA CTTTCAAATT TTGATTGTTT CATTAATATT CTGCATACTG
43901 ATGTAAACCA AGTTCTATTA TTGTGCAATC TGCTCCTGAA ACCCTTAGGA
43951 ACTCTCTGAA GGAGTTTTAT TTATTTTTTG TTTTGTGTTT TGTTTTTGTT
44001 TTGTTTTTTT GAGACGGAGT CTTGCTCTGT TGCCCAGGCT AGAGTGCAGT
44051 GGTGCGATCT CGGCTCTCTG CAAACTCGGC CTCCGGGGTT CACGCCATTC
44101 TCCTGCCTCA GCCACCGGAG TAGCTGGGAC TACAGGCACC CACCACTGCG
44151 CCTGGCTAAT TTTTTTTGTA TTTTATAGTAG AGACGGGGTT TCACCGTGTT
44201 AGCCAGGATG GTCTCGATCT CCTGACCTTG TAATCCGCCC GCCTCGCCTC
44251 CCAAAGTGCT GGGATTACAG CCGTGAGCCA CTGTGCCCGG CCTTTTTTTT
44301 TTTTTTTTCT TTATGGGCTT GTCTTCTACA CTTGAGATTT GACTAAATTA
44351 AATATGCATT AAATGAAGTC AGGAGTTCAC ATTGCCACTA GTAACAATGC
44401 CTAAGCTTAC ATAAAGCATT ATAAAATTGT TGGTGATTAG TGCCTTCTCA
44451 GCTATGAGTA TAAGATAATA TTATACTAGT AGTTCAGTTG CCTAGATAAA
44501 TTGTACACTA TGTGAAGTTT TATTTACATA ATTCTTACGG TATTTTTTAA
44551 GGTAGTTGAT AACAGTTGAG ACTACAATTG TATCTCCATT TTATTGATAG
44601 TAAATGAAG GAAGGGAGGG TFACTACCAT AGGAGAGCTC CTCCCCGTTG
44651 CACTCTTGCC TGTA AAAATT TTTCTGCCAA AACAATTTAG ATAATAGAAT
44701 TGTA AAAATA TTATTATAGA ATTGTTTCTC TCAA CTATA GTAATGTAGA
44751 ATAGGTTGAA GGGGTGATGA TTTGAAACAA TACCTCTCCA TTAGCTAAAT
44801 TTTATATAGA ATCTATTGCA TGTTTTAAAT GATAAGTCAG ATTTATAAAA
44851 ATATTTTTAT AAACAGTAGG AAATGAGTTT AGGGGTATTC ACATACAGTT
44901 TTAATTTTTA TTTACATATT TAAAACATAT CATGGTATAA ATATGATGTG
44951 GATATAAATT TGAGATAAAG GAAGTATTGT TTAAGAATTG ATGA ACTAAT
45001 TTCTTAAAG ATGTCATCAC CAGTTGGTTT TCTAGCCTTA TGAAAAATGG
45051 TTGCAATAAA AAAGATTGAC TATGATAAAA TGCTGCCCTT TCATTTTAAC
45101 CTAGACCAAG AGAAAACATA CTGTGAATCT ATGATGAATG AAAGAAAGTT
45151 GTAACGTGTG GTTTTGATATA TTTGTAATTA CTGTTTATT TCATTTCTTG
45201 TGAACGTGATA CTGTACTTTG TTCATTGTGA GTAGACA ACT TATAATCTAT
45251 GTA CTCAAT TGGTTTAGTA TAAATTCTAG GGAATGAAGT TCATATTAAC
45301 TGTA AAAATA CATGATTGTT CTCTAAACA AAACGTCTTC TGGGATTATT
45351 TTTAACTAAG GCGCATGGGG ATCTTTTTTT CATTTTTACA GGAATTGAC
45401 ATAGGGGATA GCTTAACTAT TCCAGATGAA TTCACGGAAG ACGAAAAAAA
45451 ATCCGGGACA ATCCGAGGAG AGCTTTTGCC AGGAGGCATT GCTGGTGCTG
45501 TCTCTCGAAC AAGCACTGCC CCTTTGGACC GTCTGAAAAT CATGATGCAG
45551 GTGAGCTTTA TTATCGTGTG TCCAGGTTTG CCCTAAATAT TCTAAAACAA
45601 TGAGAAATGT GGTGCTTTGA AAAAGAAGTT TTA AAATTTC TCAGTAATAA
45651 TCTTTTATAC CCTAAAAAAT AAATCTATTT TGTGCTGTT AACTCTAAAT
45701 TCAGTCCATG TAAGTATGGC AGTGTAACCA ACCTTAAATT GTTAGTACAT
45751 GTGTGTAATG AACTTTTAAT CTTTGGCATT CTATGACTAT TCAAACATTT
45801 AATTCAAAAA ATATCTCTAG CTATTGTTGT AGGATTCTCC TGATTTATAG
45851 TTTCTTCTT TTTAATATAC TTTATCAAAA GTAAAGTATT TTTGAAATCT
45901 AGACTCTTAG AGCAGCAATG TAATTTTGAA AATTATTCTA AAGCTGAGGT
45951 TAGCAGAAAA AGATCTGGCT TTATAGACTG ACTTTGCTAT TTAGTAGCAG
46001 TGTAGCATTG GGCTGGCCAG AGTGGAAGA GGAATGGAA AAGAATTAAT
46051 ATGTATTTCG TCACTGTGGT AACCCAGTTA ATCCTTGACAG CAGCCCAGTG
46101 AAGTAGGTAT TTTATCATTT TTCCAGGGGG AATCTGAGGC CCAGAGAATT
46151 GACTTTTCCT TTACAACAAA TGAGAGGGGG AATGCAGTAT CTTTGCTTCC
46201 AGTGCTCCTG GTTCTCATGC TGCATGAAAC CTCTGAGGTC TCATTTTCCT
46251 TCATTCTGGG ATGGGGATAA GAATATCTAA TAAGAATGGT TTAAGAATCA
46301 AGCAATATCA GGTATGTGAT AATGTCTGGT AACTGGAAT AACCTATTGG
46351 AACATAGTAG TTGTTTACAA AATATTTTTA AACTTTGTT ATACTTATGG

FIGURE 3P



46401 TCAACACTTT TTATATTTGT CTGTAGATTT CTGTACAAAA AGATTCTGAC
46451 ACTGTTTTAA GCCAGCATTC CTTCAGAATG TACCCAAATC TCAAAATTTA
46501 TTTAGGGGCA AAGCTAATGC TTTAAAGAAA AAGGAGAGGG GATTGGTGTG
46551 TGTTTTTCTT TAGGAACAGT AGTAACTTGA CTTTTAGAGA ACTTGAATAA
46601 GCATTTATTT TTTCTTTTGT CCTATTTTAT TGTGAAGTTT ATTTATTTAA
46651 AATAAAATGG ATTTCTCTGG AATTTAGTTT CTGCAAATTT GAGGAGTTTC
46701 CAAAGTCAAC CTTCAGGTTT GATACTTCTC TAGAAAGACT CACATAACTC
46751 ACTGAAAGCT TATTACCCCT GGTATGGTT TATTACGGGG AAAAGATGCG
46801 GATGAAAATC AGTCAAGTAA AGAAGCACAT AGGGCAGAGC TTCTGTTGTC
46851 CTCTCCCTGT GGAGTCTCCA TGCTTACTT TCCTGGCACT GTTATGTGGC
46901 ACTAGGCATG GAATATTGCA GACCAACCAG GGAAGCTCAC CTGAGCCTTT
46951 GGTGTGCAGA GTTCTTATTG GGCCTGTTT TCATACTGGC CACATGGCTG
47001 GCCTTCAGAA TTCAACCCGT TCTGTGAGTG TGTGTGTGTG TGTGTGTGTG
47051 TGTGTGTGTG TGTTTAGTGG TAGTCACCCC TTTTATGTGA GCTGAAACAA
47101 TCAGAAGAAT AGCTGATTG TTTAATTATT TTTGGTGTAT TGGACTTAAT
47151 CAGTTTTTAT CTGTAGGTGG TCATAAGGTA CAGTATTTTT AAGTGACTAC
47201 CACATCTGTA GTATAAGCCA AGTAATTTAT CAGTACTCAC AGGATGGGTA
47251 CATGTTGTAA TGAATTTATT GCCTAGAGAG GGCCTCAAAA TATGCCAAAG
47301 AGGGTGCAAT TTTTATTTTT GGTTCAGGC TGTATGCATT CCAGTGTGTTG
47351 TAGCCCTGAT ATACACAATA TCCAAACCAT TTCAGACCCA TTTACAGTTC
47401 ATGTCTGTAC TACTTCTTGA GGAGAGGGAG TAACATATTA CTTTAAATTA
47451 TATGTAATAA TATACATACA TTAAATTATA TGTAATAATA TAATATTATT
47501 ATTTGCAGTA TACTTTTTTA TTTCCCTTTA ACTGAGCTTG TTCATGTTTC
47551 AAAGGGTGTT CCATTGCCTG ATACATAATT TAGTTAATAT TATCTTATGA
47601 AGGTTGTTCA TAATTTTAAT ACTCTTCTTG TCTTCTCTCT CTGCTTTCTC
47651 AACTGAAGA TACCAATTAT TCTTAGTTTT AGAGTCAGAG ACAGGCCTCT
47701 AAAATCATGG CAATAGTCCC TCTCATCATT ATATATATTT TTCAACCTTT
47751 CTATATTTTA TTTTCAAATA TATCTTCTTG CAGTTAGAAA CGGTATTGAA
47801 AAAGATTGTG TGTTTGTCT AGAAAAAGTA ATAGTAATAT GCCACCAGCA
47851 TTTTATATCA TTCTGCTTTT ATTTTLAGGT TCACGGTTCA AAATCAGACA
47901 AAATGAACAT ATTTGGTGGC TTTGCACAGA TGGTAAAAGA AGGAGGTATC
47951 CGCTCGCTTT GGAGGGGAAA TGGTACAAAC GTCATCAAAA TTGCTCCTGA
48001 GACAGCTGTT AAATTCTGGG CATATGAACA GGTAATTGTT ATCACCCGTG
48051 GAATTTATTA ACAAAGAGGA GTTAGTAAAC GGATTCAATA AATGTTAATG
48101 TATAATGCTT TTGGGATTCT TGTTTAAATA CATGATAATC TTTACATAT
48151 ACCCCATAAG GAGGATCACT TATAGGAGAT TAGACTAAAT AAAATCAGAG
48201 ATTTCTCATG ACCAAGTTAT GGGATTCTTA ATTCATCATA TTATTTATAA
48251 AGTTTTTTTT TTCTAAGTAG TTCTTAAAGG AAGGGTAGAA TTTTAGTTTA
48301 TCTATTCTGA ATCCTGAGCA GAAGCAGCAC ACTAACATAA GTTTTATGAA
48351 AGTGTCACAA TCTAACCTCT GGAAGGAAAA CTATAAGTTG AAGTCCTTTG
48401 TGTAATTTGA CGTTGCTGTA AAATTGAGCT GAGTTTGGAG TGACACCTCC
48451 ATGAAGGCAG GGGCGTGGCT TCTTCCCAT GTACTCCAGC ACCTAGACAG
48501 AGCTTGGCAT GTGATAAGTT TCAAGCGAGT GTTGAATGAG TCAATGAATG
48551 AACAAATGCA TTTACCTCTG AATCACTTCT CTGTCGGCTT TTGTAACTT
48601 GGATTATTTG AGCTATTGCT TCAGCCTAAC TCAATGTAAA GGGGAAATAC
48651 AGAGGTAAGT TTTAGAGTTT GGGTTCTCTT TATGGTCATT AGCAGAACTG
48701 TCTAGTTGAG CAGCCACAGA TTATGTTTTT CATTATTTAT TCCATCATG
48751 TTTATCAAGG ACTGTAAGGG CCTTGAAATT CAACTCCCC CCCCATAGTT
48801 TTTGTATTAT TCCATGTAGA TTTTAGATTA TTCTGGAGAG TGTTTTGTTT
48851 TTGAGCAACA GAATACTCTT GAGAAAGATTA CGAAGTCCAG TGGTATCCTT
48901 TTCTTTGCCT GAAGAAATAGA GAAGCAAAAA AAAAAAAAAA AAAAAATTAA
48951 AGAAAATCTA GTCTCCAGGA TTTTAATTAG AACCTATCCT TGGGAAGGCT
49001 ATTTTCCTTA TATGAAGGTT TGAAGATTCA AATCATGATT ATTAAGGGCT
49051 AATGTTTGAG ATACCTTAG GTTATTCTGA CCACATACTT GGATTTTATG
49101 ATAGGAAAGC CACAGCCTAA AATAAATAA TACTCAATGC AGTTATTTCA
49151 GTATGCAAGA AGTTTGGTAT TTTTGAAAA GTCCATGGGT ATTGCAAGCA
49201 AATATGCACA TTTTGCTTTA TGCCATTTGT CAGATTCTTA CCTTGGATAC
49251 CACCAACAGG CATCCTCTGC TTCTGTCCAC CCAAGCTCCT TCCTGAGACC

FIGURE 3Q



49301 TCTTTATAGT ATTGTGATTT CTGCACACTA ACTTTCTTAG ACATGAAGAG
49351 AAAGCTGTCT ACACAGTGTG GTGTAGTTTT CTTATGGGCT CTGGACCTAT
49401 GGTGCTGTTT TCTCTCCTCC TGCTGAAGGT CCATTCAATCC CTCGGGGCTC
49451 TCTAAAAGCC ACCTTCCTGT GACAAGCATA TACTAAGCAT CTCAATCAAA
49501 GCCAGTTCCT CCCCTGTCCA GCCTCCCTCG AGTGCTGAAT TGCAGAATAT
49551 CCCATTTTTT ATTGGATGAT GGAAAACCCA TTGTTTTCCC AGTGGATTGT
49601 AAATTACTTC GGGGTAAATA GGCTGTATAT ATTCTCAAAT TTCCCAGAGT
49651 ATGTAAGTAG GTCACTTTTA GATTGAGATA GATTTTGTTT CTTGAATAGC
49701 TAGTACTTTA GGAAACTAAG AAAAAGATCT TTTCAACCTG GTATGTAGCT
49751 CTGTCAAACA CATCATCAGT ATGGGGTAAA CCTGTGTTCT CTGTGGGTG
49801 TCATTACCAT AGTAGTGTC TGTATCATT GACAGTGTA TAGTGTGGGG
49851 TAGTGTCTT GTGGTTTCAG CTGCCACTCT GACTGACTG CTTTCCACTC
49901 CAACATCTTC CTCTTTATCT CAACACTGTA GGTCTACCTG TGTACTGTGT
49951 GTTTCAGCAT CTCTGCTTGC ATGACCCAGG AGTGCCCTCC ACTCAATATG
50001 GCCACCATGC ATGGTCATCT TTCTGCTACT CCCTGTCTCC TGACCTGTCT
50051 CCAGCAACAC AGACAGACAC CCTTCCTCTT TCTATATGTC ATATGGTGGG
50101 GAATGCCCTT TAGTACTTAC TCAGGAGTTA GTTCCTCTGG GAAGCCTTCT
50151 GTTCTAGTTT CCTTTTGTTA CAGCACTTTC ACATTGAATT CTGACGTTCT
50201 CTGTACTTAT CTGCTTTGTG AGACTGTGAG CTTCCCTAGG CAGTAGCTAC
50251 TTGTATTCTT AGCACCTTGC CCAGTGCCAG GAAACCCTTA TTAAGTAAAT
50301 GAAAAGACAG AACTGACAGA CTGGAATTAG AGCTCAAGCT TGCCTCAATC
50351 TCAAGCCATT AAGATGAAGG GGAGCCGGGC GTGGTGGCTC ACGCCTCTAA
50401 TCCAGCACT TTAGGAGGTA GTTTGCTTGA GCCCAGGAGT TCAAGACCAG
50451 CCTGGGCAAC GTGGCAAAAC CCCATTTCTA CAAAAAATAT AAAAATTAGT
50501 TGGACGTGGG GGTGTGTGCC TGTACTCAGG ATGCTGAGGT GGGAGGATCA
50551 CTTGAGCTCG AGAGGCAGAG GTTGCACTGA GCTGGGATCA CACCATTGCA
50601 ATCTAGCCTG GGTGATAGAA TGAGACCTTG TCTCAAAAAA AAAATAAATA
50651 AATAAATAAA GGGGAAGATA AGGATTGGAA ACAGAAGGAG CAGCATGTGG
50701 ACAGAAATGT AGGCACAAGA AGGCATCACT CACTGAAGAG ACTGAAAGTG
50751 GTTCACTGTG CCTCAAGACT GGTGGAGTGT GTTCCCGAA AGATAATGAT
50801 GAAAGAGCTG GACAGATAAA CAGGGGCCAA ATGTAATAGG AGTCTGGATT
50851 TTATTCTGAA TATGGTAGGG GCTATTGTAG CATCTTATAT AGGGAAGTGA
50901 AATGAGTACA TTCACATTTA AGGAATATCA ACCTGAAAAA AGAGTGGAGA
50951 CATTGTTGGG GGAGAGTGAG GTAGACTAGA GGCAGGGAGA ATATTTAAAT
51001 AATTGAGGTA AGAAATGATG AACACCAGTA TAAGGTGATG TCTTTAAGGA
51051 ATGGAGAAGG GAATGAACTG AGAAATATTT TGGAAGTAGA ATCAACAGAA
51101 CTCCTGACT GACTGGATAT GGAGGTGAGA AAGAGAAGAG TCAAGAATGA
51151 TATTCTAATT TCTAACTTGA GTGACTGCAT TCAAAGAGAA TACAATATCA
51201 GGTTCCATTT TGTGCATGCT GAGTTTGAGA TGTGTGGGAC ATGTACAGGG
51251 AGCTGTCCAG TAAGCAATTG GGTATATCAG CTAGCCATTA AGAGAGAGAT
51301 CTTTGATAGA GAGGTTGTTG CTGAGTTGAG CCATTGGAAT GGGCAGGATC
51351 ACTCAAGAAG AGCTTATAAA TGAGAAGAAT TCTAGGAATA AGTCCAAAGG
51401 GAGAAGTAAA AGAAGAAACT TGCAAAGGAC ACTGAGAAGA AATAGCTCGA
51451 GGGATGGGAG AAAATCCAGA GAGAGGGATG GCATAGGAGT CAGTGGGAAGG
51501 AAACGGTTTC ATGGGGGTCA GTACTACTGG GTAGTGAATA TAATAAGAAT
51551 ATCTTTTFAAG ATTTCTCAAC CCAGAGATAG GTAAGCTTAG TATAAATGCT
51601 TCTGTGAAGT AATGAAATGA GAAACCATGC TGAAATGAGC TTAAAGTGAA
51651 TGGGAGGTGA AGAACTTGG ACAGTAGAGA CACATTTTGA GGGAGTTTGA
51701 CAGTGAAGAG AAGGAACTA GAAGAGGGAG AGGGTGATAG ATAAGAAAGA
51751 TGTTGGGTGG AGGGGATTTG TTTTTTGT TTTTGT TTTTCTGTTT
51801 GTATGTTTGT TTGTTTTGA GATGGAGTCT CACTTTATCA CCCAGGCTGG
51851 AGTAAAGTGG TGCAATCTCA TCTCACTGCA ACCTCTGCCT CCTAGGTTCA
51901 AGTGATTCTT CTGCCTCAAC CTCCTGAGTA GTNNNNNNNN NNNNNNNNNN
51951 NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
52001 NNNNNNNNNN NNNNNNNNNN NNNNNNTGCCT CAGCCTCCCG AAATGCTGGG
52051 ATTGCAGGAG TGAGCCCCC GTGCCTGGCC TGGAGGGAGG ATTTTGATT
52101 GACTTTAATG TGCCTGTTGC TGAAGGAAGC ATGTCAATAC AAATAAGAA
52151 GTTGAACA TAGGTAAGAG AGGTTGATTA ACCCGTAGG TGTTTCAAGG

FIGURE 3R



52201 GAGTTTGTGT GTAGGGAAG GGAGTGGGAG ATGGAAAGGG GCTGGGGGAG
52251 ACAGGTTCTA TCCAGAGACT GTTAAAAGGA TTAGTCTTTG ATTACAAGAA
52301 GAACCTTTCT TATACGTGTT TGGGAAGAAA AAATATGTGA GTAGCTATGG
52351 ATAATTTTGC AGGAGGTGGG CAGAATACCA AGATATTCTG CCTGGTGGCC
52401 TCTCTACTCT TCCTTGAGCT CCTGAGAAAG GATGTGATCT GAGAATGAGG
52451 GAGGAAGTGG TATTGGAAGC TGGAGGAGAA TGGAGAAGAT CAAAATGGTT
52501 AGTCTAACAA ATGGGAGAGA ACTGAGATAG ACAAAGGAT TTCAGGGTGG
52551 TTTTGAGGGC TCAGTTAAGT CTCCTTTAGG AAGGTTCACT TCTGTAGCCT
52601 TGGCAAGTTA CTAAAGTCT CTGTGACTAT TACCTCATCT CTAAGATGGG
52651 GACTAAGCTT GGTGACATAG TTTTACATAC CAGGCACAGT GCCTGACTTT
52701 TTGGCTCTGT CCTGAAGTCT TCCCTTTGTA TATGGTATGT TTCGGGGAAT
52751 AGGAGCTCA AGCACTTATC CTTTAAATAT TTATCCTCCA TCAGTCACTA
52801 AACGTTTACT CTGTACTTTT GATAGGTGCT GTGGGGGTCC AGGGTATAAA
52851 AGGTACCTTC AAAGTTACTG TTAAGTGCA GGAAGTTTT TAAGCAAATT
52901 ATGTTTAATG ATTTTGACAA TCTGACATGC AGGAAAATTA ATAGGCGCTA
52951 TGCAGAAGAG GAGTTTTATG TAACACTCTG TAGTTCAGGA AACAGAGCCC
53001 TTGGAAGCAG TGATCTCTCT GGGGAGGAAT GTCTGGTATT TGGGAATCTC
53051 ATGAAATGAT AATATACTTA ATTTTATCA TGAGCAGCAA AACACAGATT
53101 TGCTAGGAGA AAGTCATCGT ATGTTGTTGC ATTGGGCACT TTAGATCCCA
53151 GGGAACAGAA ACTGGCTGGC ACAGGAATGG GCATCACTGT GGGGATGGAT
53201 CATGTAGGGG AAGGATCCCT GGAGAAGTCC AGGAGGTGAG ACTTCCCCCT
53251 TCCCTTCTCC ATGCATGAGT CCACTTCTCT CTGTTGACTT TCCCCTTGTC
53301 CCTCTGGTGA CAGCAGCTGC TTACCTCTGG AGACCCCTC ACATTTCTGA
53351 GAGAAGGAAT CTGGCTTGCC TGGCTAATTC CCATGGTCTA TGTTTGGGCA
53401 GAATGTCTTA GCAAGTTGTG TAAAGATAGT GTATTCATAT ATTAATAATA
53451 ATAATAACAT TACTGAACA TTTGCTAGGT GTTCAGACCT GCACTAACCG
53501 TGTTACAAGT ATTATTTTTT TGTAAATCCT TCCATAACCC TGTGAGGTAA
53551 GTA CTGTTAT CACAGACAAG GAAACCACAA TGTGGACCTG TTCATGAACT
53601 TGCTCGAGGC CACGTGGCTC TGGAGTTCCA GCTCAGGTCT GCCTGACTCT
53651 CAATCCCATG ATATTAATAT ACTGGCCAGT CACTATTTTG GCTGTATTGG
53701 GGTCAATTT ATACCCTTGG TCCAGTTAGC TATGTTGGGT CACTTTAGTA
53751 CTGATAGCCA GGGAGATGCT GGGCTTGATA GGTTAGTATA ATTCTATGTA
53801 TTACCTACAA AAAGTGTGTT TATAAATTGT TTTGTTAACA TTTGTTTGTC
53851 ACCTATTTAT TCATTTTATT TGCACTGGTG AAAATAAACT CATCTTTTAA
53901 AAAGTGTGG GAAAATATCC AAACATTGTG AAAACTTGAT TAACCTTGTA
53951 TTTTCTGTAC ACCTGGGGAG GGATGCTGTT ATGCTGTTTC AGCAAAGGAG
54001 CAAGTTGGT CAACTGGGA GACATCTGTG TTTTGTGGAA ATCTGACTTG
54051 AAAACCACTG TCCAGTCACT GCGTGTATTA GCATTTAGGC CTTGCTCTTC
54101 TGCTATGTAT TATTAATGTA GTGTATACAT TTCGAGACAC ATCATCACAT
54151 TTGTCAATTT ATTGATTTCT AGGAGCTGAT TTGTATTCTA GGATTGTCTA
54201 GTTGGCTTGG GCTGCCATAA AATACCACAG TGTGTGTGGA ATCAACAACG
54251 GAAATTTATT TCTAACAGTT TCAGAGGCGG GAAAGCCTAA GATCAAGGGC
54301 CAAGCCAGTT TGATTTCTAG TGAGCGTTCT CTTCTCAGCT TGTAGACAGC
54351 TGGTATGTGC TCACATGGTC TTTTCTTGGT GCACATGTGA AGGGGGAGAG
54401 AGAGAGTGGG CTCTCTGGTG TCTGCTCTTA CAAGAACACT GATCCTGTCA
54451 TGAGGGCTCC ATCCTCATGA CCTCATAACC CTAATTACCT CCAGAAGCCT
54501 CATCTCCTAA TACCATCACA TGGGAGGTTA CAGCTTCAAC ATATGAATTT
54551 GGTGGGGGTG CAGCTCAGTC CACAGCAGGT AGTAATGTGC ATTTTAAAC
54601 TTGTTTATAC AGTACAAGAA GTTACTTACT GAAGAAGGAC AAAAAATAGG
54651 AACATTTAG AGATTTATTT CTGGTCCAT GGCTGGAGCA ACTGCACAGA
54701 CTTTTATATA TCCAATGGAG GTGAGTACCA TTGTCAAGTC TGACTGTGTG
54751 ATGGTGTTCG TGTTGGTTGT CTATTGCTCT CTAACAAGTT ATCCCAAAAT
54801 TAACAGTTTA AAACAAGCAT TTATCATCGC ACAGTTTCTC TGGGTCAGGA
54851 ATCTGGAAGC AGCTTAGCTG GGTGCCTCTG GCTCAGGGTT TTTCACAGCC
54901 CACAGTCAAG ATGGTAGTCA GAGCTTGGA TCACTGGAG GCGGATTCCA
54951 AGCTCACTCA TGTTGCTGCC AGGCCTCACT GGCTATTGGC TGGAAACATC
55001 AGTTCCTTAT CACGTGAGCC TTTCTGTAGG CTGCCTGAGT ATCCTCAAAA
55051 CACAGTAGCT GGCTCCCTA GAGTCAGTGG TCCAACAGAG AGAGAGAGAG

FIGURE 3S



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| | | | | | |
|-------|------------|-------------|-------------|------------|------------|
| 55101 | AGAGTGCCTA | AGATGAAAGC | TGGTATCTTT | TGCCTCTTCT | GCTGTATTCC |
| 55151 | ATTGATCACA | CAGACCAACC | CTGGTAGAGT | GTAGGAGGGG | CTGGTATAAT |
| 55201 | GGTGTTAATA | ACCGGAGACA | AATATCACTG | GGGGTCACTT | TAGAGGCTGG |
| 55251 | CTGCCACTTT | AGAGGCTGGC | TGCCATTCTT | GTCCAAAGAG | TTTCTGTACC |
| 55301 | ATAAATTTAA | TAATGGAATC | TCAGGATTG | ATTATATGGT | GATTATCCTA |
| 55351 | ATTAGACATC | CTTTTCATTAG | TGCATAGGTT | GGCAAAACAC | AGACCTACGG |
| 55401 | ACTGTTTCAT | ACAGCCCTTG | ACCTAAGAAT | GCCTTTTACA | TTTTTAAAAA |
| 55451 | GTGGGCAACA | CAGGAAAAAG | TGAGAAAGAT | CTAAAATCGA | CACCCTAAGA |
| 55501 | TCACAATTAA | AAGAACTAGA | GAAGCAAGAG | CAAAACAAAT | CAAAAGATAG |
| 55551 | CGGAAGACAA | GAAGTAGCTA | AGGTCAGAGC | AGAAGTGAAG | GAGATAGAGA |
| 55601 | CACGAAAAAC | CCTTCCAAAA | ATCATTGAAT | CCAGGAGCTG | TTTTTATGAA |
| 55651 | AAGTTTAACA | AAATAGACAA | CTAGCCAGAA | TAATAAAGAA | GAAACCAGAG |
| 55701 | GAGAATCAAA | TAGCCCCAAT | AAAAAATGAT | AAAGGGGATA | TCACCACCAA |
| 55751 | TCCACAGAA | ATACAACTA | CCATCAGGGA | ATACTATAAA | CACCTCTATG |
| 55801 | CAAAATAAAT | AGAAAACTA | GAAGAAATGG | ATAAATTCCT | GGACACATAC |
| 55851 | ACGCTCCCAA | GACTAAATCA | GGAAGAAGCT | GAATCCCTGT | ATAGACCAAT |
| 55901 | AACATGTTCT | GAAATTGAGG | CAGTAATTAA | TAGCCTACCA | ACCAAAAAAA |
| 55951 | ACCCAGGACC | AGACAGATTG | ATAGCCGAAT | TCTACCAGAG | GTACAAAGAG |
| 56001 | GAGCTGATGC | CATTCTTTCT | GAAATTATTC | AAACAATAGA | AAAAGAGAGA |
| 56051 | TTCTCTCCTA | ACTCATTTTA | TGAGGGCAGC | ATCATTCTGA | TACTAAAACC |
| 56101 | TGGCAGAGAC | ACAACCAAAA | TAGAAAATTT | CAGGCCAATA | TCCCTGATGA |
| 56151 | ACATCAATGT | GAAAATCCTC | AATAAAATAC | TGGCAAACCT | AATGCAGCAG |
| 56201 | GACATCCAAA | AGTTTATCCA | CCATGATCAA | GTTGGCTTCA | TCCCTGGGAT |
| 56251 | GCAAGGCTGT | TCAACATATG | CAAATCAATA | TAACGGAATT | CATCAATAAA |
| 56301 | CAGAACCACT | GACAAAAACC | GCATGATTAT | CTCAATAGAT | GCAGAAAAGG |
| 56351 | CCTTCGATAA | AATTCAACAC | CACCTCATGT | TAAAAACTCT | CACTAAACTA |
| 56401 | GTTATTGATG | GAATGTATAA | CAAAATAATA | AGAGCTGTTT | ATGACAAACC |
| 56451 | CACAGCCAAT | ATCATACTGA | ATGGGCAAAA | GCTGGAAGCA | TTCCCTTTGA |
| 56501 | AAACCGGCAC | AAGACAAGGA | TGTCCTCTGT | CAGCACTCCT | ATTCAACGTA |
| 56551 | GTATTGGAAG | TTCTGGCCAA | GGCAATCAGG | CAGGAGAAAG | AAATAAAGCG |
| 56601 | TATTCAGATA | GGAAAAGAGG | AAGTCAAATT | GTCTCTGTTT | GCAGTTGACA |
| 56651 | TGATTGTATA | TTTAGAAAAC | CTCCTTGTCT | CAGCCCCAAA | TCTCCTTAAG |
| 56701 | CTGATAAGCA | ACTTAAAGCA | AAGTCTCAGG | GTACAAAATC | AATGTGCAAA |
| 56751 | AATCACTAGC | ATTCTATTAT | ACCAATAATA | CACAAACAGA | GAGCCAAATC |
| 56801 | ACGAGTGAAC | TCCCATCCAC | AATTGCTACA | AAGAGAATAA | AATACCTCGG |
| 56851 | AATACAACCT | ACAAGGGATG | TGAAGGACCT | GTTCAAGGAG | AACTACAAAC |
| 56901 | CACCTCTCAA | GGAAATAAGA | GAGGACACAA | ACAAATGGAA | AAACATTTCA |
| 56951 | TGCTCATGGA | TAGGAAGAAT | CAATATCATA | TCATAGGAAG | AATCAGTGGC |
| 57001 | CATACTGCCC | AAAGTAATTT | ATAGATTCAA | TGATATCCCC | ATCAAGCTAA |
| 57051 | CATTGAATTT | CTTCACAGAA | ATAGAAAAAA | CTACCTTAAA | TTTCATATGA |
| 57101 | AACTAAAAAA | GAGCCTGTAT | AGCCAAGACA | ATCCTAAGCA | AAATGAACGA |
| 57151 | AGCTGGAGGC | ATCACGCTAC | CTGACTTCAA | ACATACTACA | AGGCTACAGT |
| 57201 | AACCAAAACA | GCATGGTACT | GGTACCAAAC | AGATATATAG | ACCAATGGAA |
| 57251 | CAGAACAGAG | GCCTCAGAAA | TAACACCACA | CGTCTACAAC | CATCTGATCT |
| 57301 | TTGACAAAAA | CAAGCAATGG | GGAAAAGGATT | CCTTATTTAA | TGTATGGTGT |
| 57351 | TGGGAAAACT | GGCTAGCCAT | ATGCAGAAAA | CTGAAACTGG | ACCCCTTCCT |
| 57401 | TACACCTTAT | AAAAAAAAAA | TAACTCAAG | ATAGATTTAA | GTCTTAAACA |
| 57451 | TAGACTTAAA | CTATAAAATC | CCTAGAAAAA | AACCGAGGCA | ATACCATTCA |
| 57501 | GGACACAGGC | ATGGACAAAG | ACTTCATGAC | TGAATCACAA | AAGCAATGGC |
| 57551 | AACAAAAGCC | AAAAATTGACA | AATGGGATCT | AATTAACTA | AAGATCTTCT |
| 57601 | GCACAGCAAA | AGAAACTATC | ATCAGAGTGA | ACCGGCAACC | TACAGAATGG |
| 57651 | GAGAAAAATT | TTGCAATCTA | TCCATCTGAC | AAAGGGCTAA | TATCCAGAAT |
| 57701 | CTATAAGGAA | CTTAAGCAAA | TTTACAAGAA | AAAAAAACCC | ACCAAAAAGT |
| 57751 | GGGTGACGGA | TATGAACAGA | CACCTTCTCAT | AAGAAGACAT | TTATGCAGCC |
| 57801 | AACAAACGTG | AGAAAAGGCT | CATCATCCCT | GGTTGTTAGA | GAAATGCAAA |
| 57851 | TCAAAACCCC | AATGGCATA | CATCTCACGC | CAGTTAGTTA | AAAAGTCAGG |
| 57901 | AAACAACAGA | TGCTGGCAAA | TATGTGGAGA | AATAGGAATG | CTTTTACACT |
| 57951 | GTTGGTGGGA | GTGTAATTA | GTTCAAGCAT | TGTGGAAGAC | AGTGTGGCAA |

FIGURE 3T



Docket No.: CL001103

Serial No.: 09/777,921

Inventors: Gennady MERKULOV et al.

Title: ISOLATED HUMAN TRANSPORTER ...

58001 TTCCTCAAGG ATCTAGAACC AGAAATACCG TTTGACCCAG CAATCCCATT
58051 GCTGGTTATA TACTCAAAGG ATTATAGATT TTTCTACTAT AAAGACACAT
58101 GCACACGTAT ATTTATTGCA GCACTGTTCA CAATAGCAAA GACTTGGAAC
58151 CAACCCAAAT GCCCATCAGT GATAGACTAG ATAAACAAAA TATGGCACAT
58201 ATACACCATG GAATACTATG CAGCCATAAA CAAGGATGAG TTCATGTCCT
58251 TTGTAGGGAC ATGGATGAAG CTGGAAGCCA TCATTCTCAG CAACCTAACA
58301 CAGGAACAGA AAACCAAACA CCACATGTTT TCACTCATAA GTTGGAGTTG
58351 AACAAATGAGA ATACATGGAC ACAGGGAGGG GAACATCACA CACTGGGGCC
58401 TTTTTGGGGA TGAGGGGCTA GGGGAGGAAT AGCATTAGAA GAAATACCTA
58451 ATGTAGGTGA CAGGTTGATG GGTGCAGCAA ACCACCATGG CACGTGTATA
58501 CCTATGTAAC AAACCTGCAC GTTCTGCACA TGTATCCCAG AACTTAAAGT
58551 ACAATTTTTA AAAAGTAGGC AAAAACAAAA GAAAAGAAAA GTAATATACA
58601 ACCGAGACCT AATATTTTAG GCTTGCAACG ACAGATATTT TACTATTTAG
58651 TCTTTACAGG AAAAGTTTTT CAACTACTGC TTTATAGCAA AAATAATATT
58701 GTAGATGTGG AATTTATTGA TATAGCAGAG GGGTTTTTAG TAACTGATGA
58751 CTTAAGCAAG ATAAATACAA TTTTCACCGA TATGTGGTAT GCATGCTAAT
58801 ACAGCTTTTT TTAAGCATCT TAATATGATT GTTTATATTA CTCCACACAC
58851 CTCTCAAAAA AACTTAATAC CCTATTTTTT CTCTCATATC CTCCCATATC
58901 AGTTAATAGT ATCACCCTCC CAACTCCCCA CTGCCCCATC CTGTGTTCCA
58951 AGCTAGAAGT ATTGGGGTTA TCCTTTATAC TACCATTTCC CTCACCTTCC
59001 AGATGCAGGT GGTCAACAGT CAGTTTTGTT AAGACATCAA TAGATTATCT
59051 TGCTTCCATT TCCTTGGTCA CTTCTTCAT CAGATCCTCC TTGCAGTAAA
59101 CGGGTCTCTC TGGCTTTGGT CTTAGCCCCC CAATAGAGGT AATACATGAA
59151 AGAGAATGTA TCAACAAATT GTACAGTCTT TTGAGTGACA ATATGTGCTA
59201 GGTATTTGTT CCATGTAAAA TTACTTCATT TGAATCCCAT GATGATAGAG
59251 TTAATATGAA CAATCATATT TTGTTTTTTT TTATATCCAG GTTATGAAAA
59301 CCAGGCTGGC TGTAGGCAAA ACTGGGCAGT ACTCTGGAAT ATATGATTGT
59351 GCCAAGAAGA TTTTGAAAAA TGAAGGCTTG GGAGCTTTTT ACAAGGGCTA
59401 TGTTCCCAAT TTATTAGGTA TCATACCTTA TGCAGGCATA GATCTTGCTG
59451 TGTATGAGGT GAGTTTGTAG AAATCTTTTG AATTGGAAAA TGCAGTTAGA
59501 TCTTGTTAGA ATTGGACTTT ATATGAAGAA GTAGATATAT ACCAGAAAAC
59551 AGTGTGTGAC CAGAAGTAAA TTCAAGCATG TGTATTGTA ACTTTCAAGT
59601 AACTTGAGTG TGAATATGCA TGGGGTCACT TTTGTATTAG ATTTTCTTGG
59651 GAATTGCTTT TGTTAATGAA GAGTAGACTC AAAGTTAGGT ATAGTTGTTC
59701 ACCTTAAAGG GTGTTTCTAG AGATTTTTTC CTTTGTTTTG GATTTGCAAA
59751 AATCTGACAT TAAGCCAAGT GACTAATGTG ACTAACATGA GTAATACAGT
59801 TTCATTCCTT GTACGGAAGA ATACAAATCT TGGATCAACC CTGCAATCTA
59851 AATCATTTAA TAATTTATGA ATCTCACAAA CAATTATTGA GCACACACTA
59901 TACAAACCAAC TAGTTAGAC ACTGGATCTG GGGATTCAAA GGACTCAATG
59951 TGTGCCTTGA AGAAACTGAA GGTCTGGTGG GGGAGACAAA CGACTAAAAC
60001 TCAGCGTGGT TATCTGTGCT GCGACAGACA TGAGCCAGGG TGCATGTTAG
60051 GATGAGACCT AAGCTACAGC GTAGAGGAAG AGTGGAAATG GTAATGAAAA
60101 GAAGAGTCGA ATTTTTTTTT TAAAGAGCTT TATTGAGATT TAGTTCATAT
60151 TCCTTACATT TCACTCATTT GAAGTGACA AGCAAATGGT TTTTGGCTTC
60201 TTACATAATT TTTAAAAATT ATTATAAAAT ATAAAAATTTG CCATTTTACT
60251 AATTTTAAGT GTACAATTCA GTGGCATTAA TTACATTAC AATATTGTGC
60301 AACCATCAAC ACTATTTCCA AATCCTTTTC CTCCTCCAA ACAGAAACAC
60351 CTTAACCTTT AAGCAATAAC TTCCTACCCT CCGTAACTCA AACCTTTGGT
60401 AACCTCTAAT CTGCTTTCTA TGTCTAGGAA TTTACCCATT CAAGATATCT
60451 TATAAGTAGA ATCATAAGT ATTTTCTTT TTGTGTCTGA TTTATTACTC
60501 TTAGCATTAAT GTCTCTAAGG TTTGTTCTAT TTGTAGCATG TATCAGAACT
60551 TCATTTCTTT TCTATGGCTGA GTAATATTCC GTTATGTGTA TATACCATAT
60601 TTTGTTTAGT CCTTCATCTG TTGAAGAGCA TTTGGATTAT TTCTACTTTT
60651 CCAACATTGT GAATAATGCT GCAGTGAACA TTGGCATCTG CGTATCTGTT
60701 CGAGTCTATG CCTTCAATTC CTTTGGGTAT ATATCTCAGA ATGGAATTGC
60751 TGAGCCATAT GGTCAATCTG TGTTTAGCTT TTAGGAACTA TGAGACTGTT
60801 TTCCATAGTG GCTGCACTTA CATTCTCACC AGCAACATAC AAAGGTTCCA
60851 GTTTTTCCAC GTCCTTATTA ACACTTAATT TCCATTTTAA AAAAGCTTAT

FIGURE 3U



Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

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60901 TTTTATTATG GCCGTCCTCT TAGGTGTGAG GTGGTATGGT TCAGGACTTT
60951 ACTTCTTG TG CTGAGTTTTT TAAAAAATTG TGATTAAAAA CACATAACAT
61001 AAAGTTTATG ATTTTAACCA TTTTAAATA TATAGTACAG TAAGTGTTAA
61051 CTGTTTGTGG TTTGTTGTGC AACAGATCTC TAGAACTTTT TCACTTCTCA
61101 AAACCTAAAC TCTATAGTCA TTAACAACA GCTCCCAATT TCCCTTCAC
61151 CCCAGCGCTG TGTAACCTAC TTTCTCGTTT TATGAGTTTG ACTACATTAA
61201 ATACCTTGTA TAAGTGAAAT CATGTGGTAT TTCTCTTCC GTGACTGGCT
61251 TATTTTCATG AACATAGTTT CCTCATGATT CATCCATATG ATAGCATACA
61301 ACAGGACTTT TTTGTTTTTA AGGCTGAATA ATAATTTGTT GGGTATATAT
61351 ATCACAATTT CTTTATTCAT CTGTTGATGG ACATTTGGAT TGTTCCTACA
61401 TCTTGACTAT TGTGAATAGT GCTGCAGTGA ACATGGTTGT GCAAATATCT
61451 CTTCAAGATA CTGTTTTT CAG TTCTTTTTGA CATATACTCA GAAGTGGAAT
61501 TTCTGGGTCA AATGGTAATT CTATTTTTAA GTTTTTGAGG AACCTCCATG
61551 TCATTTTCCA TAGTAACTAG ACCTTTTTGT TTTTAAACAT TTCTATCAAT
61601 GTACACCAAG ATTCCAATT CTCCATGTCC TCCCAACAC CATTAAAGTG
61651 GGTGGTGGTC TACTCATTT GCTGTGTTGC TGTATTATCC TCCCTTCAGT
61701 TCTGTAAGTG TTTGCTTCAT ATATTTAGGA GCTTAATATT AGGTCCATAT
61751 GAAGTTATAA TTTCTTCTCG GTAAAGTGAC CCATTTATCA TTATGTAATG
61801 TCCATCTTTG TCTCTTGTA CAGTTTGTGT CTTAAAATCT ATTTTGTCTG
61851 ATGTAATTAT GGCCACCCCT TTTCTCTTTG GGTTCCCGTT TTTATGGAAT
61901 ATCTTTTCC ATCCTTTCAC TTTCAGCTTA TGTGTGTCCT TAGATCTAAA
61951 GTGAGTCTCA TAGATAAGGT ATAGTTGATT CTGTATGTGT TATTCACTCA
62001 GCAATTTATA TCTTTTAGTT AGGGGATTTA ATCCATTTAC ATTTAAAGCA
62051 GTTACTGATA GGAAGGACT TACTGTTGTC ATTTGGCTAG CTACCTTTTT
62101 ATCTTTGTCC TGTGGCTTTT CTGTTTTTCC CTTCTCTCTC TCCTGGCTTC
62151 TTCTGTGTTT TGTGATTTT TTTTTTTTT GTAGTGATAT GTTCTGATTC
62201 CCTTCTCAT TCCCTTTGTG TGCATTCTAT AGATGCTATT TTTGTGGTTA
62251 CCATTGCAAC TACATAAAGC ATACTAAAGT TATAGCAACT TATTTTAAAGC
62301 TGTTTACAAC TTAACCTCAG TGGTATATAA AACTCTATTT CTTTACATAT
62351 TTCACCTCCT CCCCACAAAC TTTATGTCTT TTGATATTGT ATATCCTTAA
62401 CATAGATTTA TAGTTACTTT TTATGCTTTT CTTCTTTAAA TTCTGTTTAA
62451 ATTTTGTTTT TGAAATTTAG ATTTTCAAGT TATTTATATA CCTTCATTAC
62501 AATACTATAG GATTTTATAA TATTCTAAAT ATTGACCTTT ACCATAGAGT
62551 TTCATAATTT GTGGTTTGT GTTGCTATTT ATCATCCTTT TGTTCCTCCT
62601 TTTAGCCTTT CTTGTAGGGC CGGTCTAGTG GTGATAAGCT GTATCAGCTT
62651 TTGTTTGTC GGGACAGTCT TAATTTCTCC TTTTTTGAAG GGCAGTTTGT
62701 CCCATACAGT ATTTTGTGTT GGCACTTTT TTAAGTTTCA AAACATAGAA
62751 TATAACATTC CATTTCTTCT TAACCTGCAA GATTTCATT GAGAAATGCA
62801 CTCAATGGAT TTTTAAATCC ATTGAGATAA TTTTAAATC CTGTAGGATT
62851 TAAAAATTTT AGTCTTACAG GATTAAAAAA TTAAAAAGTT AAACCTGTGA
62901 TATAACATAT TAACATGTAT TTTATACTTA AAGTATCTTA TGTTTAAAAA
62951 GTTGATTATC ATATATATTT TATACAGTTT CTCCTAATTA TTGCCTTCTA
63001 ATGAAATACA GGGACCTAGA GTAAACAGGA TAAAGTATGG CCTTTTGATC
63051 AGCACGCCTG GTTCTGAGTC CTTCTTAAAA AAACCTCTGG CCTGGTGTGG
63101 TGGCTCATGC CTATAATCTC AGCACTTTGG GAGGCCGAGG CGGGCGGATC
63151 ACCTGAGGTC AGGAGTTTGA GATCAGCCTT GCCAGCATGG TGAAACCCTG
63201 TCTCTACTAA CAGTACAAAG ATTAGCTGGG CGTGGTGGTG GGTGCCTGTA
63251 ATCCAAGCTA CTCAGGAGGC TGAGGCAGAA GAATCGTTTG AACCTGGGAG
63301 GCAGAGATTG GGCCACTGCA CTACAGCCTG GGTGACAAGA GCGAGACTCC
63351 ATCTCAAAAA AACAAACAAA AACTCCGCTG AGATGAATTT TTCTCATTTT
63401 TAAAAATCAGA ATAATAGATT TATGTAAGAG TTTCTGTAAG GCTCAAATGA
63451 AATATATGTA ACGTGTAATA TGAGATACAA TTAGTAGAAT TATATTATTT
63501 TATTAATACT ACCATAAGA GGTGTTCTTT AGATCCTGCA GCGTTTGCTG
63551 CGCAGTTCAC GTTTGTTTAG AAGAATGTCA GTAACCGGTG CAAACCTCAT
63601 GTGTTCCGCA CCCCCAGTGG CCTCCACCT CTCCACAGAG TCACCGCCTC
63651 CTGCAGTGCC TGCTGCTTCT GCAAATGCGT GGCCTCATCC TGCAGAAACG
63701 GGGCTTCTCA TGAGGTTGAG AATAGCTGTG AAAATGTTTA CGTTGAAGTT
63751 GTAGAGTTCT TTAATTATTT TCTTCTTTAT TTCTCTGGCA GCTCTTGAAG
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FIGURE 3V



Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

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|-------|-------------|-------------|-------------|-------------|-------------|
| 63801 | TCCTATTGGC | TGGATAATTT | TGCAAAAGAT | TCTGTAAACC | CTGGAGTCAT |
| 63851 | GGTGTGCTG | GGATGCGGTG | CCTTATCCAG | CACCTGTGGT | CAGCTGGCCA |
| 63901 | GCTACCCATT | GGCTTTGGTG | AGAACTCGCA | TGCAGGCTCA | AGGTGAATTT |
| 63951 | TTGATTACAG | AACCACACCG | ATAAAAGTGC | TGCACCAGTA | ATGTGCTTTT |
| 64001 | AGAACTCAA | GTTCTACTAA | GATGCAGACT | GTAGTTTTAA | GACAGTATTT |
| 64051 | CTCAACCTTT | TTTTCAATTAT | TGCCTCCTTA | AGGAATCTTT | TCAGAAATTC |
| 64101 | TTTTTCTAAA | TGCTCCCTCG | TCATGAAATT | TTAATGCGAC | AGAAGCATTG |
| 64151 | CATATGTACT | GTATGCATAC | ATATGCCTTA | TAGATAAACA | GAGTACTATT |
| 64201 | TTTTTTGACT | GTGTTACATG | CACGTTTTAA | GATTATAAGC | TTTAGTATCT |
| 64251 | GATGGATTTG | GGTTCAGATC | CTTGCCCTCAG | ACTTCTTGGG | GTTTTTAATG |
| 64301 | GGAATGAAAA | TTGTACAGTG | TTGTAAGAAT | TACCAACAAT | ATAAATAAAG |
| 64351 | CATCTTGGGT | TTGTTAAATT | TTTGGTAAAT | GGTGGTTGGA | ATCATTTTTT |
| 64401 | AGTGTGCGT | AGACCCTACA | AGTTTTGAGC | TGTGATTCCCT | CCTCACTGTG |
| 64451 | ACACTGTCTC | CATTGTTGGC | TTTGATTACA | CTGTACCATC | CTGGTTGTTT |
| 64501 | TGCCAGCCCA | TTGATAACTT | TTACCATTGT | CTGGCTTTTA | TTGCTATCCC |
| 64551 | CACCTCTATTA | AAGTATGCAT | TCAAATGCCT | TTCTTTTCTC | TTTGATGCTT |
| 64601 | TCCCTGGTCA | GTCTTATCCA | TTGTTTTCTT | AAGTAGTACA | CCTTGGGCAT |
| 64651 | CTACAGCTCT | ATTCCCAACC | TCCCTTCCAA | GTGCCAGCCA | CAGCAACCCC |
| 64701 | AGCCAAGCAG | TCAGTAACTA | ATTGGCAAAT | ACTCCCTGAG | CCATTGTCCC |
| 64751 | ATTCTAGACA | CTGCCAGATG | CTAGGGGTAG | AGCAGTCAAC | AAGTCAGGTG |
| 64801 | TGGCCCCGCC | AGTGTAGAGT | AGAGAAGACG | TTATGTCCAG | CAAGTAAACA |
| 64851 | ACCTGGTTAA | ACCAACTCCT | CTTTTGTTAG | GGGAGCACAG | AGCAAGGAGC |
| 64901 | TATAACCTAA | CTTGGGCGCT | GCAGAATGCT | GTCAGTGAAG | CTGAGACTGG |
| 64951 | AAAGATGAGT | GGGAGTTAGC | TGGGCACAGG | CCAGTGGAGT | GGGAACAGAA |
| 65001 | AACATTCCAG | TTGAGGGAAA | GCATGTGTGA | AGACACTGAG | GCAGGCACCA |
| 65051 | ACATGGTGTA | TTTAAGGAGC | TGAGAGACAG | TCATGGCTGT | AGAGAAAAAC |
| 65101 | ACAAAGTAGT | GAACACACAG | TTTCTTGTGT | ATTCTCTCAT | TTCAACCATCA |
| 65151 | TAACCATCTT | GGGGATGGGA | ATACTAACAT | TATCCCCATT | TTTCAGATGA |
| 65201 | GCAACTGGGG | CAGAGAGAAT | TTAAGTAACT | CCCACAAGAT | TATACCTGTG |
| 65251 | GTAATAGTG | GGACTGAAAT | TCAGACACAT | GCAGTCTGAT | TCTAACCTCT |
| 65301 | CTGTCTGCCA | GCTCTGATCC | AGAACTTTGC | ATGACTGATA | CGGCTGATAG |
| 65351 | ATTGTCTATG | GCTGATAGAC | TGTCATTTCT | GACCTAAAAG | TCTGATCATT |
| 65401 | TTACATCTGT | TCAGACATCT | TTGCAGCCTT | TCGGTGTCTAG | TTCCAAAGTT |
| 65451 | GTTAGTGGGA | ATTTCAAAGC | CTTTAATAAT | CTAGCCCCAC | TTTGTTCACT |
| 65501 | CTCTGTGTAA | TAACCACATA | CAACAATTGG | CTGCATCTCC | ATAGCACATG |
| 65551 | GTACTCCTCC | CGTTGTCTTG | GTTGTGCCAG | CAACACTGGT | TTTCGCTTTC |
| 65601 | TCTTCCTGCT | TGTTGAGGTC | ATTTCCAAGG | CCCAGGTCTT | TGTGCTTTTT |
| 65651 | CCCAAGCTTC | CCAGAGCTTC | TTCCATACTC | CCCTTACTTC | CTGAGATTTA |
| 65701 | ACTGTTCTCT | CTTCAGCGCT | TGTCTAGTAA | GAAGGAGGCA | GCAGCAGCAC |
| 65751 | TGTGGGGTGG | TGGAAAGTGT | ACCAGCTTTG | GAGTCAGACC | ATTGGATCTC |
| 65801 | AGCCCTACCA | TTTTCTACTT | AGATTTTTTT | AGGACAAATT | TCTCCATCTT |
| 65851 | TCTAAGCCTC | CAATTGCTCA | CTTACAAAAT | TGATATAACA | TTTACCTTGC |
| 65901 | AAGATTGGTA | TGGAAGGTAA | TTAACCCAGT | ATTTAGAACA | TAGTAATTAA |
| 65951 | TAAATAACTA | TTATTACCAT | CATTACTATA | GTTAGGACAC | TCACTGTTAG |
| 66001 | GTGCTATACA | AAGAGGATCA | TAAAAGGGAT | GTTGTCTTGG | GCTTCTTGGA |
| 66051 | ATAAATGTTG | TCCTTTTACT | GTATTTTAGA | ATATCATTCT | GGGTCATAAT |
| 66101 | TGTTTGTTGT | CATAATAATG | AAACATACTT | GAATATTTAA | TTACCCTCTT |
| 66151 | TTTTTATTTT | TTAGCCATGT | TAGAAGGTTT | CCCACAGCTG | AATATGGTTG |
| 66201 | GCCTCTTTCG | ACGAATTATT | TCCAAAGAAG | GAATACCAGG | ACTTTACAGA |
| 66251 | GGCATCACCC | CAAACTTCAT | GAAGGTGCTC | CCTGCTGTAG | GCATCAGTTA |
| 66301 | TGTGGTTTAT | AAAAATATGA | AGCAAACTTT | AGGAGTAACC | CAGAAATGAT |
| 66351 | GTTGCATTTT | TTGCTTTAGC | CTGATAATTG | AAACTTTCAA | CAATCTCTGG |
| 66401 | AGTGACTTTT | TCTCCTCGAA | TTGAAACAAG | TCTATGGCAA | AAGAAGCTGC |
| 66451 | ATTTTTTTTCA | CAAAAGGGAA | GATGGTAACA | ATGGTCACTT | CAAACTTTTG |
| 66501 | GGCTAAATTA | TATGTACACA | GAAATGTTCA | AAATCATAGT | TTTAATGTGT |
| 66551 | TTTGAAAAGG | CCACACAATT | ATACTTTATC | TTTTCTTAAT | AATCCTGCAA |
| 66601 | ATCTCTGCCC | TGAATCCGAA | ATCTGAAAAT | GTAAGGCTT | GAACAAAATT |
| 66651 | TGTTTTGTGT | GTTAGAGTTA | TAAATCATTA | ATCTTTATTT | CGGGTGGTTT |

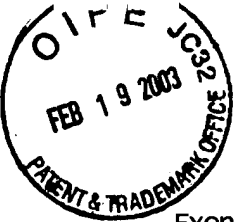
FIGURE 3W



66701 ACGTTTATGC CAGTTCCTTT ATATTTAAAT TTCTTGTTTT ATATATTTTG
66751 AATGTCTTTA TAGATTTCTT TAAATTTTCT TATAGAACCA TTAATAGAAA
66801 ATCATTACAT TTAAATATA CCTTACAGCA AAAGCATCCA AATAAGTATA
66851 GGGTTTATGT CCTATTTTTT CTTTCAGCTG AATACGAATG AGCACAGTGG
66901 TGGAAATTTCT GAAGGGAAGT GATGAAATTA TATTTATTTT AGTGGGCACT
66951 TTTCCATTTT ACCACTGTAC CATTATTTGG TTCCTGGAGT TATACACTAA
67001 TTTTCAGTAT ATTACTGTTA AATTACCAAC ACAAGGCAAT TTATTTGAAA
67051 GATTCCGTTT ATCCTGCCAT TGCTTTGAAA AGCAGCAGGA AACGAAATCC
67101 TTTGACTTGT ATCAGCTTCT GCAGAGCATC TTTGTTTTCC TTTGTCCTTT
67151 GTTTCCTACC TTTTGAATCA GATTCCGTTT TAGTCAGGAA GACTTCTTGG
67201 GACCATTCTT AGTAACCTGA AATTTCTTTT TTAATTGCAT GAAGTGGATT
67251 GATCATGAGC AAATGATGTG CTTATTTCTC CTCACCTGTT GAATATCTTT
67301 GAACCTGCTG TTTTCAATAT GGGCAGCACA AAGGTGAGAG ATACATATTA
67351 ATAGTAGTAT GTATTACTCT TATACATTAG ATACCTATAT TTAAATGAAA
67401 GGCCCAATTT GTAAACATAT ACATTCATAT TCTCTCTTGC CCCAAGTTTT
67451 AGGAACATGT TAGGATATAG GAGACTTAAT TTATAATAAT GAGAGCATTT
67501 TTTTATTTTA CTAAAGCCAT TTTTATAGTC AACTATCTTT TCTTATTTGT
67551 GTGATTAGAA CTTAGAAAAA TATTTACTAG TTGAAGTTAT TATCAGTTTT
67601 TAATTTAGTT CTTAAACTCA TTTCACTTCT AATAATTTCT GTTATAAATT
67651 GCCAGCATTT TAATGAAAAT CTAATGATGT AATAGGCATT TTCTTTATTT
67701 GAACCTACCT CTTTTATTTT CTGAACCAAA GAGAAAGATG GACTGGTGTT
67751 TGTGAAACAT TTTTAAAAAT GTAGTTTCAT TTATATTAGT TATGTTTGAT
67801 AAATGTCTCA GTATTTTAT AATATGATAA GCCTGGGATT CTACTTTTAG
67851 GGTATTTTGT ACTTTTGAGT AATATATAAA GTGACAATAT TAAGGTACAT
67901 GATCAGCTCT TTCTATTTTT ACTCGTAAAA ATTATGGAAA TGAATAATTT
67951 TGCTAACAACT TTTGAAATTT CAAACTTCTG GAAAAATATGA AAATATTCAT
68001 TGTTCAATTAT GAATTTAAAT TGTAAGGTAT GAATGTGATT TGCTGTACA
68051 TCTTGATCTT TTTCCAAAAA ATGATTCTGT ATCTTTTGA AAAAAAGCCGA
68101 GAGTTGAAGA TAGTATATTT CTGGTAGTAC TGAATATTTA CTTACAGTTT
68151 CTATCAAAAA TATATATTTG TTTCTAAAAT TACTTGTTTT CCAGTTTTTA
68201 TTTTTTTTAG AGAAAAATCT TAAGTCTCAG TTTCTTAATT GAAAAAATAA
68251 AATTATAAAT AAAGCAAAAA TTGTATCCTA CAGCTTAGCT AGCTTAGATG
68301 TTTGGACCA GTTTGAATCA TGCTTTTTAC AGCTGGCTCC ATGTAGTCTT
68351 TCCAAACATT TTGGCCTTTC CTGAGCAGCC CTTGTAGATA TTGTCTGTAT
68401 GATGCATTTT GACACAAGGT GATATTTTTT GTGATATCAA AATTCCACAT
68451 TTACCCATTA GAGTTACAGC CCTGGGGTTC ACAGTACCAA GGGGGACCCA
68501 GAGCCTCAGG ATTGGCCAGG CTCATTTTGC CGTGGAGTAT CAGTTTGTCT
68551 TGAAATTTGT GGAAAAAATT CTAAGTTGAA TCACTGGTA AGTAATTTTT
68601 TAAAAATTTCA TAATGCAGAT TACATCCAAA ATTTGATTTA AAAATTAAAA
68651 CATAAGACTG CAGAGAAATT CTGCATTTCA ACTCCAATAC TATCCAGACT
68701 TCAGAAATAA CTTATCAGTT ATTTCTGTAA GCTTCTTGCT TACCTGGATA
68751 CCTGACAGGT GAGATGGCTG TAGCAGACAC TGGCAGTTCC CTGCCCACAC
68801 ACCTGTCCCT GTCCACAGCT GCACAAGGCA GCTCTGTGTG CAATTGCCAG
68851 CATCTGCTCC TCTGTTCTCA GGGAAATCTT GTTAGAAAAA TGCTGCCATA
68901 TTTGTTTCTC ACCTATTAGT CTGTCTCCC AGTCAAGAGA ATAAATTTAT
68951 GCAAGCAGAG ATTGTACTTT ACAGTATTTT GTCTTTGAGC TTGGCATTAG
69001 GTTGCAATTTG TAAAAATGTG GCATGGCTTC CTCATCCCCC AATAGGAAC
69051 TTGCCAGCCC TTTTGTCTC ATGGAACCTC CTTTTTTGAA AAGAGCACCA
69101 AAGGAGTAAA AATACTGTGG AGGGAGCAAC CCTCCTTTGC CATATGCTCT
69151 CATTGGGAGA CATGTGGAGC AGTCTGAAGT CATTTAGGCC ACTCTCTGGG
69201 AGAGCACATC TATGATGTT CTCCCAGCCT AGCCCCCTCC ACTGTGCTCA
69251 AGTCCAAGCT GACCAGCTTT CTGACCACAG TGTAAACAAA GATGATTGTC
69301 AGTGGGCCCC AGAATCCTAT ACCCAGA (SEQ ID NO:3)

FEATURES:
Start: 2132
Exon: 2132-2314
Intron: 2315-17055

FIGURE 3X



Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

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Exon: 17056-17182
Intron: 17183-20983
Exon: 20984-21071
Intron: 21072-41719
Exon: 41720-41831
Intron: 41832-45391
Exon: 45392-45550
Intron: 45551-47878
Exon: 47879-48031
Intron: 48032-54612
Exon: 54613-54720
Intron: 54721-59290
Exon: 59291-59458
Intron: 59459-63791
Exon: 63792-63942
Intron: 63943-66164
Exon: 66165-66346
Stop: 66347

CHROMOSOME MAP POSITION:
Chromosome 1

ALLELIC VARIANTS (SNPs):

| DNA | | | |
|----------|-------|-------|----------------|
| Position | Major | Minor | Domain |
| 1722 | G | C A | Beyond ORF(5') |
| 1767 | C | G A | Beyond ORF(5') |
| 1840 | C | G | Beyond ORF(5') |
| 1857 | T | G | Beyond ORF(5') |
| 1945 | G | T | Beyond ORF(5') |
| 2007 | A | C | Beyond ORF(5') |
| 2769 | C | G | Intron |
| 3664 | C | T | Intron |
| 3827 | G | A | Intron |
| 4113 | C | T | Intron |
| 4337 | A | G | Intron |
| 4473 | G | A | Intron |
| 6455 | T | G | Intron |
| 6533 | T | G A | Intron |
| 6919 | G | C | Intron |
| 7305 | G | A | Intron |
| 7340 | A | G | Intron |
| 7466 | A | G | Intron |
| 7589 | G | C | Intron |
| 7810 | A | C | Intron |
| 9104 | G | A | Intron |
| 9503 | A | T | Intron |
| 9898 | G | C | Intron |
| 10196 | T | C | Intron |
| 12327 | C | G A | Intron |
| 13749 | G | A | Intron |
| 14150 | T | C | Intron |
| 14529 | G | A | Intron |
| 14653 | G | A | Intron |
| 15871 | A | G | Intron |
| 19244 | G | A | Intron |
| 19387 | T | G | Intron |

FIGURE 3Y



Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

| | | | |
|-------|---|-----|----------------|
| 19447 | C | G | Intron |
| 20076 | T | C | Intron |
| 20492 | T | - | Intron |
| 20868 | T | C | Intron |
| 20941 | T | C | Intron |
| 21116 | C | T | Intron |
| 21701 | G | A | Intron |
| 21710 | A | - | Intron |
| 21826 | C | T | Intron |
| 21840 | - | T | Intron |
| 21841 | - | C T | Intron |
| 21843 | - | C | Intron |
| 22045 | C | A T | Intron |
| 22061 | G | T | Intron |
| 22348 | - | A G | Intron |
| 22682 | A | G T | Intron |
| 22783 | - | T | Intron |
| 23448 | A | G | Intron |
| 24960 | G | A | Intron |
| 24983 | T | C | Intron |
| 25390 | T | C | Intron |
| 26060 | C | T | Intron |
| 30245 | C | G | Intron |
| 33664 | G | T | Intron |
| 33883 | C | A | Intron |
| 34373 | G | A | Intron |
| 34558 | G | T | Intron |
| 43929 | T | A | Intron |
| 44309 | T | - C | Intron |
| 44997 | T | G | Intron |
| 46538 | A | G | Intron |
| 48153 | T | C | Intron |
| 48288 | G | T | Intron |
| 48412 | G | A | Intron |
| 48446 | C | G | Intron |
| 48456 | G | C | Intron |
| 48789 | C | - | Intron |
| 48859 | G | C | Intron |
| 49126 | A | G | Intron |
| 49378 | T | G | Intron |
| 49482 | A | C | Intron |
| 49741 | G | A | Intron |
| 49840 | A | G | Intron |
| 50102 | G | A | Intron |
| 50109 | C | G T | Intron |
| 50747 | G | A | Intron |
| 51272 | G | A | Intron |
| 52842 | G | A | Intron |
| 61837 | A | G | Intron |
| 62018 | A | G | Intron |
| 65562 | A | G | Intron |
| 65780 | G | A | Intron |
| 66092 | G | A | Intron |
| 66617 | C | T | Beyond ORF(3') |
| 66892 | G | A | Beyond ORF(3') |
| 67263 | G | A | Beyond ORF(3') |
| 67651 | G | T | Beyond ORF(3') |
| 67935 | C | T | Beyond ORF(3') |

FIGURE 3Z



Docket No.: CL001103
Serial No.: 09/777,921
Inventors: Gennady MERKULOV et al.
Title: ISOLATED HUMAN TRANSPORTER ...

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| | | | |
|-------|---|---|----------------|
| 69000 | T | G | Beyond ORF(3') |
| 69134 | C | T | Beyond ORF(3') |

Context:

DNA
Position
1722

TTGCCCACGCAGATGGCTGTTGATCTTTTCTGCAACAAATCCAGGAGTTTCTCCTTTTTG
TTTTATAATTGCTCCAATAGATGCTTTAGGATTTAACTCTCTGCTTTTTAAAGCAGAATC
GCCATCCCAGGTGTGCAACCACGAAAAAATTAGACATCCGTGAGAGACAATGCCCTCCAT
GGCCAGTTTCCAGGCAGAGAGAAGCAGCTCTGGGCTGACCGCCAAGGCTCCGGCCCGAG
AGGGTCTTTAAGTGGAGTAACCACTCTTCAAGACCCCGCTCCAAGCCACCGACGCGCTG
[G,C,A]
CGCTGCAGCCCTGGACCTGCTGGGGGCTCTTCTCGGACCCGCTGCTGACAGCGGGAC
TGGCAACTGGGCAGAGGTGACCCCGGGTCCGCACAGCACCTCCCAGACCCAGCTCCCA
GCTCCCTCACTTCCGGCTCTCTGGAGGCGGGCCCGCCAGTGCCGCCGAGGCCAGCGCGG
CGAGCTCTCCCAGCAGCGGCGGGACGGCCACACCTGCGCGCCGCGCGGGCTCGGGTG
GGGTCTCCGCTCTGCGCCCTGCGCGCCGAGCCGACCCCGACGGCGCCCCAAACGCT

(SEQ ID NO:35)

1767 AGTTTCTCCTTTTTGTTTTATAATTGCTCCAATAGATGCTTTAGGATTTAACTCTCTGCT
TTTTAAAGCAGAATCGCCATCCCAGGTGTGCAACCACGAAAAAATTAGACATCCGTGAGA
GACAATGCCCTCCATGGCCAGTTTCCAGGCAGAGAGAAGCAGCTCTGGGCTGACCGCCA
AGGCTCCGGCCCGAGAGGGTCTTTAAGTGGAGTAACCACTCTTCAAGACCCCGTCCCAA
GCCACCGACGCGCTGACGCTGCAGCCCTGGACCTGCTGGGGGCTCTTCTCGGACCCGC
[C,G,A]
TGCTGACAGCGGACTGGCAACTGGGCAGAGGTGACCCCGGGTCCGCACAGCACCTCCC
GAGACCCAGCTCCCAGTCCCTCACTTCCGGCTCTCTGGAGGCGGGCCCGCCAGTGCCG
CCGAGGCCAGCGCGGCGAGCTCTCCCAGCAGCGGCGGGACGGCCACACCTGCGCGCC
GCGCGGGCTCGGGTGGGGTCTCCGCTCTGCGCCCTGCGCGCCGAGCCGACCCCGAC
GGCGCCCCAAACGCTGTTGCGCGCGCGCCCCGCCAGCCCGGCTCTGCGCTGGTCCCGG

(SEQ ID NO:36)

1840 TCGCCATCCCAGGTGTGCAACCACGAAAAAATTAGACATCCGTGAGAGACAATGCCCTCC
ATGGCCAGTTTCCAGGCAGAGAGAAGCAGCTCTGGGCTGACCGCCAAGGCTCCGGCCCG
AGAGGGTCTTTAAGTGGAGTAACCACTCTTCAAGACCCCGCTCCAAGCCACCGACGCGC
TGACGCTGCAGCCCTGGACCTGCTGGGGGCTCTTCTCGGACCCGCTGCTGACAGCGG
GACTGGCAACTGGGCAGAGGTGACCCCGGGTCCGCACAGCACCTCCCAGACCCAGCTC
[C,G]
CAGTCCCTCACTTCCGGCTCTCTGGAGGCGGGCCCGCCAGTGCCGCCGAGGCCAGCGC
GGCGAGCTCTCCCAGCAGCGGCGGGACGGCCACACCTGCGCGCCGCGCGGGCTCGGG
TGGGGTCTCCGCTCTGCGCCCTGCGCGCCGAGCCGACCCCGACGGCGCCCCAAACG
CTGTTGCGCGCGCGCCCCGCCAGCCCGGCTCGCGTGGTCCCGTCTCGCCCCGAG
CCCTCGATCTCCCGTACTTCTCGGCCAGGCCGCTGCGCTCTGGGACCATGTTGCGC

(SEQ ID NO:37)

1857 CAACCACGAAAAAATTAGACATCCGTGAGAGACAATGCCCTCCATGGCCAGTTTCCAGG
CAGAGAGAAGCAGCTCTGGGCTGACCGCCAAGGCTCCGGCCCGAGAGGGTCTTTAAGTGG
AGTAACCACTCTTCAAGACCCCGCTCCAAGCCACCGACGCGCTGACGCTGCAGCCCTGG
ACCTGCTGGGGGCTCTTCTCGGACCCGCTGCTGACAGCGGGACTGGCAACTGGGCAG
AGGTGACCCCGGGTCCGCACAGCACCTCCCAGACCCAGCTCCAGCTCCCTCACTTCC
[T,G]
GCTCTCTGGAGGCGGGCCCGGCCAGTGCCGCCGAGGCCAGCGCGGCGAGCTCTCCCCAG
CAGCGGCGGGACGGCCACACCTGCGCGCCGCGCGGGTCTCGGGTGGGGTCTCCGCTCTG
CGCCCTGCGCGCCGAGCCGACCCCGACGGCGCCCCAAACGCTGTTGCGCGCGCGGCC
CCGCCCAGCCCGGCTCGCGTGGTCCCGTCTCGCCCCGAGCCCTCGATCTCCCGTGA
CTTCTCGGCCAGGCCGCTGCGCTCTGGGACCATGTTGCGCTGGTGGGGACTTCGT

(SEQ ID NO:38)

1945 CAAGGCTCCGGCCCGAGAGGGTCTTTAAGTGGAGTAACCACTCTTCAAGACCCCGTCCC
AAGCCACCGACGCGCTGACGCTGCAGCCCTGGACCTGCTGGGGGCTCTTCTCGGACCC

FIGURE 3AA



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(SEQ ID NO:39)

GCATGCTGACAGCGGGACTGGCAACTGGGCAGAGGTCGACCCCGGGTCCGCACAGCACCT
CCCAGAGCCAGCTCCAGCTCCCTCACTTCCGGCTCTCTGGAGGCGGGCCCGCCAGTG
CCGCCGAGGCCAGCGCGCGAGCTCCTCCCCAGCAGCGCGGGACGGCCACACCCTGCGC
[G,T]
CCGCGCGGGCTCGGGTGGGGTCTCCGCTCCTGCGCCCTGCGCGCCGAGCCGCACCCCGG
ACGGCGCCCCAAACGCTGTTGCGCGCGCGCCCCGCCAGCCCGGCTCGCGCTGGTCCC
GGTCTCGCCCCGAGCCCTCGATCTCCGCTGACTTCTCGGCCAGGCCGCTGCGCTCT
GGGACCATGTTGCGCTGGCTGCGGGACTTCGTGCTGCCACCGCGGCTGCCAGGACGCG
GAGCAGCCGACGCGCTACGAGACCCTCTTCAGGCACTGGACCGCAATGGGGACGGAGTG

2007

GCCACCGACGCGCTGACGCTGCAGCCCTGGACCTGCTGGGGGCTCTTCTCGGACCCGC
ATGCTGACAGCGGGACTGGCAACTGGGCAGAGGTCGACCCCGGGTCCGCACAGCACCTCC
CGAGACCCAGCTCCAGCTCCCTCACTTCCGGCTCTCTGGAGGCGGGCCCGCCAGTGCC
GCCGAGGCCAGCGCGCGAGCTCCTCCCCAGCAGCGCGGGACGGCCACACCCTGCGCGC
CGCGCGGGCTCGGGTGGGGTCTCCGCTCCTGCGCCCTGCGCGCCGAGCCGCACCCCGA
[A,C]
GGCGCCCCAAACGCTGTTGCGCGCGCGCCCCGCCAGCCCGGCTCGCGCTGGTCCCGG
TCTCGCCCCGAGCCCTCGATCTCCGCTGACTTCTCGGCCAGGCCGCTGCGCTCTGG
GACCATGTTGCGCTGGCTGCGGGACTTCGTGCTGCCACCGCGGCTGCCAGGACGCGGA
GCAGCCGACGCGCTACGAGACCCTCTTCAGGCACTGGACCGCAATGGGGACGGAGTGGT
GGACATCGGCGAGCTGCAGGAGGGGCTCAGGAACCTGGGCATCCCTCTGGGCCAGGACGC

(SEQ ID NO:40)

2769

TGGGGCCGCGACCGGCGACCCCGGTAACAGAAGTGGGTGATAATACGAAAGTCTACTGGT
ATTTGTCCAGATAAAATGAGTGTTGTGGACACTCTGGCCACGGGCACTGTTAAATTTT
AAGACACTTTTGTCTGAATCCATCCCAGGTTCTTTGTTTTCTGTTTTAATACCTTGCAG
ACATGTAATCCGTTTTAGCTGTGAGACTTCAGTGGGTCCCAAGTTTTGTATAAAGGCGCA
CACATTCGATCTCTTTCGAAGCTGCTTTGTTACAGCAGCTATGTGTATTGTCTACTGTTT
[C,G]
AAAACGTTTGAAAACCAATCGCGTGTTTCCCCACTTCTGTTGAGAAGGAATGGCGGC
ATTCCATTGTTTAAGACATTCTAGGTAAATGCCCTAGGTACATAAATTGATCTGAAGGG
TTGACTTGACCTGCGACTGAGCAATTTCAATTTCTCTGAGTCATCTTAAGTGTCCCTG
AACTTCTGCCCTTTAGTAGGGTGGAGATATGTGGAATCTCCAACCCTGTTGAAGCGT
TCCCTGACACTGGCATTCTCTTATCCAAAGAGGGAAAGTGATTAGGTTACTATGAGGGCC

(SEQ ID NO:41)

3664

GCTGATTGTCCCAGAAATGGCCAGTTGGAGTTCGCCACCATGTCCAATCATTGGCTGGA
AGCAGCCAGGAAAGGGACGACCTTGCTGCAGTGCATCAGCAGATGCCAGGGTTAGAGGC
TAGAGAGTGGAAGTCAACTGTGTTCTCACAGTAGGTGCCTTTGAAGGGAGATCTCAGTG
GTACAACTCCATGGTCCCTACAATATACAAAAGCTCTTTGGAGTGCTCAATGATTTTTAA
GATTGTAAAGGGATCCTGAGATCAAAAAGCTTGAGAATTGCTGCTGTATCACCATTTTA
[C,T]
GTAACCTGCATCATATTCTGTTATATGTTGTGTCATAGTATATGTTACCAATTCTTTTTA
AATCACCTTTTACTTTATTGATAGTTTAAAAACGATTGTAAGTGAAATTGCAATGGATGT
CCTTTGTATTCAATTTCTCATTCTGGTCCAGTTACTTTCGTAGGATAAATTTTGAGGAGT
GGACATTGCTGAGTCTGAAGGTAACACACATTTTAACTGGGATACGTATTGCCTTTTCGG
AAACCTTAGACCCATTTTCACTCTTTTGACTGACAGTGCTTGCTTCTCCACATCCTCGCT

(SEQ ID NO:42)

3827

GAAGGGAGATCTCAGTGGTACAACTCCATGGTCCCTACAATATACAAAAGCTCTTTGGAG
TGCTCAATGATTTTTAAGATTGTAAAGGGATCCTGAGATCAAAAAGCTTGAGAATTGCTG
CTGTATCACCATTTTACGTAAGTGCATCATATTCTGTTATATGTTGTGTCATAGTATA
TGTTACCAATTTCTTTTAAATCACCTTTTACTTTATTGATAGTTTAAAAACGATTGTAAG
TGAAATTGCAATGGATGTCCTTTGATTCAATTTCTCATTCTGGTCCAGTTACTTTGTA
[G,A]
GATAAATTTTGAGGAGTGGACATTGCTGAGTCTGAAGGTAACACACATTTTAACTGGGA
TACGTATTGCCTTTTCGAAACCTTAGACCCATTTTCACTCTTTTGACTGACAGTGCTTGC
TTCTCCACATCCTCGCTCATTCAAGGTATCAGTCTTTGTAAAGTCTCCTATTCTGCAGGT
GAAATTCCTTTTCAATTCCTGTCTTAGTCCATTTAGTGTGCTATAGTGAATATCTGAG
ACAGGGTAATTTATAAAGAAAAGACATTTATTTAGCTCACAGTCCGCAGGCTGGGAAGT

(SEQ ID NO:43)

FIGURE 3BB



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4113

CAGTTACTTTTCGTAGGATAAATTTTGAGGAGTGGACATTGCTGAGTCTGAAGGTAACACA
CATTTTAAACTGGGATACGTATTGCCTTTCGGAACCTTAGACCCATTTTCACTCTTTTG
ACTGACAGTGCCTTCTCCACATCCTCGCTCATTAGGGTATCAGTCTTTGTAAAGTC
TCCTATTCTGCAGGTGAAATTCCTTTTCATTTCTGTCTTAGTCCATTTAGTGTGCTAT
AGTGAATATCTGAGACAGGGTAATTTATAAAGAAAAGACATTTATTTAGCTCACAGTTC
[C,T]
GCAGGCTGGGAAGTTTAAGAAGCGTGGTCTGGCATCTGCTGGACTCCTGGGGAGGGCTT
TCCTGCTGTGTCAACATGGTGGAAAGTCAAAGTGAAGTGGACATGTGTGAAGAAGCA
AAATCCGAGGGGTGTCTGGCTTTATAGCAACCCAGCCTCGAGGGAAGTATCCATTACT
GAGGGAAGTAAATTCAGTCTCATGAGAGAGAGAACTCACTCACTACTGCAAGAATGACACC
AAGCCATTCATGAGGGATCTGCCTCCGTAACCCCTGACACCTCCTGCTAGGTCCCTCCTCC

(SEQ ID NO:44)

4337

CATTTAGTGTGCTATAGTGAATATCTGAGACAGGGTAATTTATAAAGAAAAGACATTT
ATTTAGCTCACAGTTCGGCAGGCTGGGAAGTTTAAGAAGCGTGGTCTGGCATCTGCTGG
ACTCCTGGGGAGGGCTTTCTGTCTGTGCACAACATGGTGGAAAGTCAAAGTGGAAAGTGG
ACATGTGTGAAGAAGCAAAATCCGAGGGGTGTCTGGCTTTATAGCAACCCAGCCTCGAG
GGAAGTATCCATTACTGAGGGAAGTAAATTCAGTCTCATGAGAGAGAGAACTCACTCACT
[A,G]
CTGCAAGAATGACACCAAGCCATTCTGAGGGATCTGCCTCCGTAACCCCTGACACCTCCT
GCTAGGTCCCTCCTCCCAACACGGCCACATCAGGGATCAGACTTCAACATGAGTTTTTGT
GGGGACAAACAAAACGTAGCACTTGTCTTGCCTTTTGGTTCTATTACATCCTCCACAGG
ATTGCATTATGCCTACCCATTTGGTGAGGGCAGTCTCTTTAATTGGTTTACTGATTCAA
ATGCTACCCTCCTCCAGAGACATCCTCACAGACACACCCAGAAATCATGTTTTACCAGTT

(SEQ ID NO:45)

4473

TTCTGCTGTGTCAACATGGTGGAAAGTCAAAGTGAAGTGGACATGTGTGAAGAAGC
AAAATCCGAGGGGTGTCTGGCTTTATAGCAACCCAGCCTCGAGGGAAGTATCCATTAC
TGAGGGAAGTAAATTCAGTCTCATGAGAGAGAGAACTCACTCACTACTGCAAGAATGACAC
CAAGCCATTCTGAGGGATCTGCCTCCGTAACCCCTGACACCTCCTGCTAGGTCCCTCCTC
CCAACACGGCCACATCAGGGATCAGACTTCAACATGAGTTTTTGTGGGGACAAACAAAAC
[G,A]
TAGCACTTGCTTTGCCTTTTGGTTCTATTACATCCTCCACAGGATTGCATTATGCCTAC
CCATTTGGTGAGGGCAGTCTCTTTAATTGGTTTACTGATTCAAATGCTACCCTCCTCCA
GAGACATCCTCACAGACACACCCAGAAATCATGTTTTACCAGTTATCTGGGCATCCCTTA
GTCCAGACGAGTTGATACATAAAATTAACCATCACACATGGGATAGAATTAGGATTACAC
AGTCAACCTTTATGGGAGAAAATTTAGAGGCATGTGAGGGGTTTATGTAATGTCAAGGA

(SEQ ID NO:46)

6455

TGTTTATTGCATTGAGTGAATCAGGATTTCACTCCATTAAGTAATTCCTCTGTAAACAA
AGAGGGTTCATTTTATTTTATTTTATTAATATTGCTTTTTTTTTTTTTTCTGGAGAC
AGAATCTTGCTCTATCACCAAGGCTGGAGTGCAGTGGTGGATCTCGGCTCACTGCAGCC
TCTGCTTCTGATTCAAGCGATTCTTGTGCCTCAGCCTCCCAAGCAGCTGAGATTACAG
GCACATGCCACCACACCTGGTTAACTTTGTATTTTCTAGTAGAGATGGGATTTTGCCAT
[T,G]
TTGGTCAGGCTGGTCTTGAATTCCTGGCCTCTAGTGATCTGCCTGCCTCTGCCTCTGAAA
GTGCTAAGATTACAGGCATGAGCTACCATGGCCAGCCCATTTCTTAATATTTTAAATTGT
CAGACATGTTATGGTTTCTGGCACAATATTAAGAAGACATGATATGAAATCACAGGGTGA
ATTTTAGGGCATCACACAGAAAGATTATGGTATAAGAAAAACAATGGAATTCACACTAC
ATTTCTGTCAAATGTTCTAAATATATAAAATCTGTATCTTTTGTGTTCTCTCCTGATTT

(SEQ ID NO:47)

6533

TTATTTCAATTAATATTGCTTTTTTTTTTTTTTTTTCTGGAGACAGAATCTTGCTCTATCAC
CAAGGCTGGAGTGCAGTGGTGCATCTCGGCTCACTGCAGCCTCTGCTTCTGGATTCAA
GCGATCTTGTGCCTCAGCCTCCCAAGCAGCTGAGATTACAGGCACATGCCACCACACCT
GGTTAACTTTTGTATTTTCTAGTAGAGATGGGATTTTGCCATGTTGGTCAGGCTGGTCTT
GAATTCCTGGCCTCTAGTGATCTGCCTGCCTCTGCCTCTGAAAGTGCTAAGATTACAGGC
[T,G,A]
TGAGCTACCATGGCCAGCCCATTTCTTAATATTTTAAATTGTGAGACATGTTATGGTTTC
TGGCACAATATTAAGAAGACATGATATGAAATCACAGGGTGAATTTTAGGGCATCACAA
AGAAAGATTATGGTATAAGAAAAACAATGGAATTCACACTACATTTCTGTCAAATGTTCT
AAAATATATAAAATCTGTATCTTTTGTGTTCTCTCCTGATTTATATTCTAAATTTGATGT

FIGURE 3CC



TATCCTTCTCTGCAGAAATAAAGTGTCTGAAAGAATGAAAAAATGGAAGAATTCTTTAG (SEQ ID NO:48)

6919 ATGAAATCACAGGGTGAATTTTAGGGCATCACAAACAGAAAGATTATGGTATAAGAAAAAC
AATGGAATTCACACTACATTTCTGTCAAATGTTCTAAAAATATATAAAATCTGTATCTTTT
GTGTTCTCTCCTGATTTATATTCTAAATTTGATGTTATCCTTCTCTGCAGAAATAAAGTG
TCTGAAAGAATGAAAAAATGGAAGAATTCTTTAGTAAGGTATAAAATACCTTTCTATC
TTTGTAGCATTCTAAGCCTTTTGTACCTTTCCAAACTCCCAACATGCCATATTCCTGA
[G,C]
TAGGCCACAGCCATGTACATTGATCCCTTTATTTTCTTCTCTCTGCCTGAGATTTCTCTC
ATTCCCCCTTCTCTGCCTGGTATATGATTGCCATTGTTTAAGGCCCAACTCACCTTTA
TAATCTTCCTAGCCCACTTTCTTTATCGGTATTCCAGAAAAACAAAAGAAGCTTCCACA
AGACAACATTCTGTAATACACTGCTTAACCTCTTTTGACCCTGCTGAGTTCAAAAATCTT
ATCTTTTAAAGGATTGAATGGAGTCCACCAAGGTATCTATTTTGACAGGATTTATGAAA (SEQ ID NO:49)

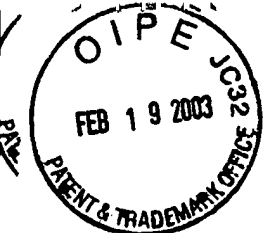
7305 GATTGCCATTGTTTAAAGGCCCAACTCACCTTTATAATCTTCCTAGCCCACTTTCTTTA
TCGGTATTCCAGAAAAACAAAAGAAGCTTCCACAAGACAACATTCTGTAATACACTGCT
TAACCTCTTTTGACCCTGCTGAGTTCAAAAATCTTATCTTTTAAAGGATTGAATGGAGTC
CACCAAGGTATCTATTTTGACAGGATTTATGAAAAACAAAAGGATTTGTTGAGAAAGTTT
GAAGCCTAACTCTGAAACGTGGATCATAGTGTCTACTACACATTAAGTGTCTTAGTGGAT
[G,A]
TAATAGTTATTATTATAGGCTGTGGAATCAGAACAGGGTTCAAATGTTTTACCGCTTGC
TAGACTGTGGCCTTGGGCATGTTATTTAATGCCTGGAGGCCTCAAATGTTAACTAGGAAT
GGTAAGACCTACCCAGTAACTTAGCATAAATAGTAAATTCATTCAATTTAATGTTTTCAA
CAGTGCCAGACATTGTTTAACTGAACTGGGGATATAGTGGTGAACAACACTGACAGCGTTC
TTCATTGTATTCTCAAAACCTCCCTATAGTAAGTAGTCTGTGTGTGTGTGTAGTGCA (SEQ ID NO:50)

7340 TAATCTTCCTAGCCCACTTTCTTTATCGGTATTCCAGAAAAACAAAAGAAGCTTCCACA
AGACAACATTCTGTAATACACTGCTTAACCTCTTTTGACCCTGCTGAGTTCAAAAATCTT
ATCTTTTAAAGGATTGAATGGAGTCCACCAAGGTATCTATTTTGACAGGATTTATGAAA
ACAAAAGGATTTGTTGAGAAAGTTTGAAGCCTAACTCTGAAACGTGGATCATAGTGTCTA
CTACACATTAAGTGTCTTAGTGGATGTAATAGTTATTATTATAGGCTGTGGAATCAGAAC
[A,G]
GGGTTCAAATGTTTTACCGCTTGTAGACTGTGGCCTTGGGCATGTTATTTAATGCCTG
GAGGCCTCAAATGTTAACTAGGAATGGTAAGACCTACCCAGTAACTTAGCATAAATAGTA
AATTCATTCAATTTAATGTTTTCAAACAGTGCCAGACATTGTTTAACTGAACTGGGGATATA
GTGGTGAACAACACTGACAGCGTCTTCATTGTATTCTCAAAACCTCCCTATAGTAAGT
AGGTCTGTGTGTGTGTGTAGGTGCATGGGAATAAAAAATAAAGCAAATAATGAACAG (SEQ ID NO:51)

7466 TTAAGGATTGAATGGAGTCCACCAAGGTATCTATTTTGACAGGATTTATGAAAAACAAA
GGATTTGTTGAGAAAGTTTGAAGCCTAACTCTGAAACGTGGATCATAGTGTCTACTACAC
ATTAAGTGTCTTAGTGGATGTAATAGTTATTATTATAGGCTGTGGAATCAGAACAGGGTT
CAAATGTTTTACCGCTTGTAGACTGTGGCCTTGGGCATGTTATTTAATGCCTGGAGGC
CTCAAATGTTAACTAGGAATGGTAAGACCTACCCAGTAACTTAGCATAAATAGTAAATTC
[A,G]
TTCATTTAATGTTTTCAAACAGTGCCAGACATTGTTTAACTGAACTGGGGATATAGTGGTG
AACAACTGACAGCGTTCTTCATTGTATTCTCAAAACCTCCCTATAGTAAGTAGGTCT
GTGTGTGTGTGTAGGTGCATGGGAATAAAAAATAAAGCAAATAATGAACAGGGTAAT
TTCAAAAAGCAGAAAGAGCTATTCAACAAAACCTACCTGCCTTTTATTAGATGAACTCTC
AACTCTATGGTTGTCTCTCCTGTCAATTCTGTTAAATGCTGTCAGCCTGTTTTCCTTA (SEQ ID NO:52)

7589 AACTGTTTTAGTGGATGTAATAGTTATTATTATAGGCTGTGGAATCAGAACAGGGTTCAA
ATGTTTTACCGCTTGTAGACTGTGGCCTTGGGCATGTTATTTAATGCCTGGAGGCCTC
AAATGTTAACTAGGAATGGTAAGACCTACCCAGTAACTTAGCATAAATAGTAAATTCATT
CATTTAATGTTTTCAAACAGTGCCAGACATTGTTTAACTGAACTGGGGATATAGTGGTGAA
CAACACTGACAGCGTTCTTCATTGTATTCTCAAAACCTCCCTATAGTAAGTAGGTCTGT
[G,C]
TGTGTGTGTAGGTGCATGGGAATAAAAAATAAAGCAAATAATGAACAGGGTAATTTTC
AAAAAGCAGAAAGAGCTATTCAACAAAACCTACCTGCCTTTTATTAGATGAACTCTCAAC

FIGURE 3DD



RECEIVED
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TECH CENTER 1600/2900

- 7810 TCTATGGTTTGTCTCTCCTGTCAATTCTGTTAAATGCTGTCAGCCTGTTTTCTTATCA
CCCTGGCCACGACTTCTGTCTTTCTGCTTGGTCTGTAGACTCTAACCCAAGGCTCATT
CTCTGCCTGGCTATCTGCCTTCTGTGGCTCTTGGCACTACCTACATTTTCTGTGTTGCA
(SEQ ID NO:53)
- CTGGGGATATAGTGGTGAACAACACTGACAGCGTTCTTCATTGTATTCTCAAAACCTCC
CTATAGTAAGTAGGTCTGTGTGTGTGTAGGTGCATGGGGAATAAAAAATAAAGCAA
ATAATGAACAGGGTAATTTCAAAAAGCAGAAAGAGCTATTCAACAAAACCTACCTGCCTTT
TATTAGATGAACTCTCAACTCTATGGTTTGTCTCTCCTGTCAATTCTGTTAAATGCTG
TCAGCCTGTTTTCTTATCACCTGGCCACGACTTCTGTCTTTCTGCTTGGTCTGTAG
[A,C]
CTCTAACCCAAGGCTCATTCTCTGCCTGGCTATCTGCCTTCTGTGGCTCTTTGCCACTAC
CTACATTTTCTGTGTTGCACAGGGAAGGACCATTCCTGTGGACCATAAAATTTCTCTTT
TGAAAGAATTCTTCTGATTGGGCCACAGCACATCTTGTGAAACAGCATTAGACATTTG
CCACTGCTCAGCAGCTCTGGGGGAAAATGTTTACTGAGAAGCGTACAGTAGTTTTTTGA
CTAACCATGGTGCAACCTCCTCCCAGAGGGAAACCTATGAGTATTTCAAGGACATGTGAT
(SEQ ID NO:54)
- 9104 TTAACGAATTATTGTAGAAACAGAAAAACAATACTGTGTTCTCATTTACAGGGGGAGC
TAAACCTTGGGTAAATGGGGCATAAAGATGGGAACAATAGACACTAGGGACTCCAAAAGG
GGGGAGGGAGGGAGGAGGGCAAGGGCTGGAAAGCTTCTACTGGGTACTTTGTTACAAC
CTGGGTGATGGCAGATTAGGAGCTCAAACCCAGTATCACACAGTATACCTTTGTAACA
AGCTGATGGTGTAACCCCTGAATCTACAATAAAATTATTTTATTTAAAAAATCATTATA
[G,A]
GGATTTTTAAAAAGAAGGATTCTAGACAGGTGCAGCCAAACAATTTTTTTAAATGTTG
GCAGGCCGCCACCGCCAGTCACTTATGCTGCAATAGCCCATGTCCCAACATTCCCAACCT
ACTTCTCTCCAAAAGAGAAGCTATACTTTAGATGGCCCTGTGCTGGGTTCTCCCTGGAA
GTTTCTGGGGAAAGGGGCTTGAGTTGCCCGACTGGACTCTTCTGGAGTGGGAGCCGGG
GCTTCTGATCAGACGTGAGTGAGGCAGGAACCTCCGCGTCTCCAGCGCAGCCAGAGTG
(SEQ ID NO:55)
- 9503 CATGTCCCAACATTCCCAACCTACTTCTCTCCAAAAGAGAAGCTATACTTTAGATGGCC
CTGTGCTGGGTTCTCCCTGGAAGTTTCTGGGGAAAGGGGCTTGAGTTGCCCGACTGGAC
TCTTCTGGAGTGGGAGCCGGGGCTTCTGATCAGACGTGAGTGAGGCAGGAACCTCCGCGG
TCTCCAGCGCAGCCAGAGTGCGGTCCACGCAGGTCCCGGTCTGCGCGCTCGCGCC
TTTGCGCTGAAGCCGTTAGGATGAGCCCTCTCCTTCCAGAGCTTTAACCAGTGAAGGTGC
[A,T]
TTGTGTTTGGCGCCCCTGAGGAGGATGCTGTCTTAGGCCTCTTCCCACTGGACGTGTGTG
GTGGGCAGAGATCCCGTTCGTGCGTGCCTTCCACCCGCTGGGGCTCACTCAGGCCGC
GGAGCTGCGAGGGAGACATCCTCGATGGACTCCCTTACGGAGATCTTTTTGGTACCTG
GACTATAACAAGGATGGGACCTTGGACATTTTGAAGTTCAGGAAGGCCTGGAGGATGTA
GGGGCCATTCAATCTCTAGAGGAAGCGAAGGTGGTCTCACTGGGGCTGTAATCAGAGAG
(SEQ ID NO:56)
- 9898 ACCCCGCTGGGGCTCACTCAGGCCGCGAGCTGCGAGGGAGACATCCTCGATGGACTCCC
TCTACGGAGATCTCTTTTGGTACCTGGACTATAACAAGGATGGGACCTTGGACATTTTGG
AGCTTCAGGAAGGCCTGGAGGATGTAGGGGCCATTCAATCTCTAGAGGAAGCGAAGGTGG
GTCTCACTGGGGCTGTAATCAGAGAGACGTTGGGGCTGGGAGCCCTGGAGAGGCATTGGG
CAGAGAGGGCAAAATTTACATGTTGTCAAGCTTGACCTGGGCCCACTGCAGTGTTCAAGT
[G,C]
GTTGACCAGCGTTACCGTTTATTAAGAATAACAACACAGCTAACACATTTCTCAAGTATT
TTTCTCCGTTTTCTCCTTGGCTGTAGTAAATCTCCAACCTTCAGATTGCTCTCAAGATGT
TGGCTACATACAGCCTTGTCTTAGGAGTCACCTTGTTCATGTGCTCACCTGTCAATAGT
CACCCAGAGGGGCGTCTAGGCTAAAGATGCGCCCTCCCAAGTTTCAGAGAAGTGAATAAT
CACTCTACGTGTATTTGGGAGTGGGGTGGTATTGGAAATTTCTGATGTTATGTTTGG
(SEQ ID NO:57)
- 10196 GTGGTTGACCAGCGTTACCGTTTATTAAGAATAACAACACAGCTAACACATTTCTCAAGT
ATTTTTCTCCGTTTTCTCCTTGGCTGTAGTAAATCTCCAACCTTCAGATTGCTCTCAAGA
TGTTGGCTACATACAGCCTTGTCTTAGGAGTCACCTTGTTCATGTGCTCACCTGTCAAT
AGTCACCCAGAGGGGCGTCTAGGCTAAAGATGCGCCCTCCCAAGTTTCAGAGAAGTGAAT
AATCACTCTACGTGTATTTGGGAGTGGGGTGGTATTGGAAATTTCTGATGTTATGTTT
[T,C]

FIGURE 3EE



- GGTTTCTGTTCTGGAAGGGGGCAGTGGAAGTGGCTTTTACTCTCGGGTTTCACTAGTGC
TGAGGTTTCTCATAATATGCCTTAATTGATAGACCCTAGTTATCAGTACCGAGCTTAGG
CTAACCCCTTCTCTCCCCAGAAGGCTAACCTACAGGCTCCTTCTCAGCATGTTGTGCTTC
GTACATACTCCTATTGCAGTATTTCCAAGTCATTTTTTCATTTGGAATTTATTATTGTATA
TAATAATTACTTTATAAGTATATTTGCTCTTTGGATGTTTGACCCGGTAGACTGGGAGAT (SEQ ID NO:58)
- 12327 GTCATGTTATTTAATGCCTGGAGGCCTCAAATGTAACTAGGTAATGGTAAGACCTACCC
AGTAACTTAGCATAAATAGTAAATTCATTCAATTAATGTTTTCAAACAGTGCCAGACATT
GTTTAATGAAGTGGGGATATAGTGGTGAACAACACTGACAGCGTTCCTCATTGTATTCTC
AAAACCTCCCTATAGTAAGTAGGTCTGTGTGTGTGTAGGTGCATGGGGAATAAAAAA
TAATAAGCAAATAATGAACAATAAAATTATTTATTTAAAAAAAAGAAATGATACTTAC
[C,G,A]
TTGTCGTGTTAAGATACAAAAGCAATAACTTTTTATTGTGAAAATAGTCTGTTTTGAAC
AATATATTGTTTTGTTTTTCTGTGAAAGTTGAGAACTAAATATACGAAGAGATAATG
GTCAGACCATAAATAAAAAAGAACTTTGACTCAAAATTTACAGCAGTCTGCCAGAAAA
CCAGCCCTTTATCTAAAAATAAACAGACCAGGAAACCGCCTGTTATGTGAGACTTATAGG
AAGTCAGGTTGCTATCTCTAGAGACAATACACAAAGCTATGCAATAACTGCTGTAACAGC (SEQ ID NO:59)
- 13749 TACAGGCGTGAGCCACCATGCGCCAGCCATAGACTATATATTTTTGATCTGATAACTGG
TTCAGCTACTAAGTGAATAACAGGCAAGTAGCATCTATAGTGTGGATATGCTGGACAAAA
GGACATTACCTCCTGGGCAGGATGGCACAGAATGTTGAGAGATTTTATCATGCTACTCA
GAATGGTGTGCAATTTAAACTTATGAGTTGTTGTTTCTGGAGTTTTCCATTTAATAGT
TCAGACCATGGATTGACCGCAGGTAAGTAACTGTGGAGAGTGAACTGTGGATAAGGG
[G,A]
GGACTATTGTATTGTTAAGTCAGACTCATTAGGCAATCATAACTCTTGATTTGCCATCAG
AAATGCTGCAGAAATATGGGTTAAAAAACTGTTCAAAATAGGGTCAGGGATGTCCTT
TAACTTGTTACTTCCAAATGTTAGTGAAAAGTGTGGCCCCAAAGAGTGAAAGGAACAAA
TGACTAAGAGAAAATCTGTTTTTAGGATGACAGATTTAAAAAAGAACTGCTGAAA
CACTGAAAATCTCTCCACTTGTAAGATAACACAACTGGCTAAAAGTGGTTGGAATGAA (SEQ ID NO:60)
- 14150 ATAGGGTCAGGGATGTCCTTTAACTTGTTACTTCCAAATGTTAGTGAAAAGTGTGGCCC
CAAAGAGTGAAAGGAACAAATGACTAAGAGAAAATCTTGTTTTAGGATGACAGATTAAA
AAAGAAGCAACTTGCTGAAACACTGAAAATCTCTCCACTTGTAAGATAACACAACTGG
CTAAAACTGGTTGGAATGAATATGGCCAACCTCAAGTCTGCACAGAACTAACTTGGTGATG
TTACAGCCCAAATTTCCACCACATATTTATACTAACTCCCCCGGATTTTCACACATGA
[T,C]
CTGTGAGGTAGCATGAAGAGGTAAGTATGCATGCCTAAGGACTTGGGAGACCTCCCCATT
TCCTTCCACCAATCACCACTAATCCCAGAATCCGCCCCAAACCTTTTCTAATAACTAC
CTTAAAGCCAGCATAGGGAGACAGATTTGAGCTGGACTCCTGTCTTCTGTGGGTACCT
TGCAATAAAAAGCTTTTCTTTCTCAACACCTGGTATTATAGTATTGACTTCTAGTTCAT
CGGGCAGCAAGCCCCCTTTGGTGGTGACTATTCTGTTGCTGATATTTCCATTGGCCA (SEQ ID NO:61)
- 14529 ACTAATCCCAGAATCCGCCCCAAACCTTTTCTAATAACTACCTTAAAGCCAGCATAGGG
AGACAGATTTGAGCTGGACTCCTGTCTTCTGTGGGTACCTTGCAATAAAAAGCTTTTC
TTTTCTCAACACCTGGTATTATAGTATTGACTTCTAGTTCATCGGGCAGCAAGCCCCCTT
TGGTCCGTGACTATTCTGTTGCTGATATTTCCATTGGCCAAAATATAAACCTCTTAGA
TGAAACTTCAGTACGTAATGGCGCCACAGAATGCTGTGACATTTTCTCTTGATTATA
[G,A]
CAGGTTACTTTACTGAATACCGTAGGCAGTTATAACACACTAAGTATTTGTGTATCTAAA
CATAGAAAAGATACAGTAAAAATATGGTAATTTTTTCAACTTTTGTGAGATTTGGAG
GGTATGTGCATTTGTTACAAGGTATATTGCATGATGCTGAGGTTTGGGGTACAATTG
AACCTGTACCCAGGTAGTGAGCATAGTACCCAATCGATAATTTTTCAACCCTTGCCA
TTCCCTCCCCGTTCTGTAGTCCCCAGTTTCTGCTTTCCCATCTTTATATCCGTGTGCA (SEQ ID NO:62)
- 14653 CTCAACACCTGGTATTATAGTATTGACTTCTAGTTCATCGGGCAGCAAGCCCCCTTTGGT
CGGTGACTATTCTGTTGCTGATATTTCCATTGGCCAAAATATAAACCTCTTAGATGAA
ACTTCAGTACGTAATGGCGCCACAGAATGCTGTGACATTTTCTCTTGATTATAGCAG
GTTACTTTACTGAATACCGTAGGCAGTTATAACACACTAAGTATTTGTGTATCTAAACAT

FIGURE 3FF



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TECH CENTER 1600@900
(S) ID NO: 63

AGAAAAGATACAGTAAAAATATGGTAATTTTTTCAACTTTTAGTTGAGATTTGGAGGGT
[G,A]
TGTGCACATTTGTTACAAGGGTATATTGCATGATGCTGAGGTTTGGGGTACAATTGAACC
CTGTCAACCCAGGTAGTGAGCATAGTACCCAATCGATAATTTTTCAACCCCTGTCCATTCC
CTCCCCGTTCTGTAGTCCCCAGTTTCTGCTTTTCCCATCTTATATCCGTGTGCACCCC
ATGTTTTGCTCCCATGTGTATGTGAGAACTTGGTGTTTGGTTTTCTATTTCTGCGTTG
ATTCGCTTAGGATAATGGCCTTCAGCTGCATCCATGTTGCTGCAGAGGACGTGATTTAT

15871 AGGAGTTTATCAATTTTATTAGTCTTTTCAAAGAACCATCTTTGGCTTTGTTAATCCTC
CCAATGGTGTGTTTTCTTTCTCATTACTTTTGGCTCTTATTTCTTCAACTTCTTTTTT
GCTTAATTTTAAAATAATTTCTTGAGATTGAGATAAGCCTCAATGATGGGTACCGATTT
CCAGTCTTTCTTTCTAATTATGCATTTTAAACCAGAAATCTTTCTCTAAGTGTAGC
TTTAGTTGCAGCTCACAAGTTTCAGATCTGTCTCTCAGTCTGGAGGTTGGAGATCTGACC
[A,G]
TGACCATGAAACCATCCAGTCACAATGTGGCATTATTTTTTAAATTTTTTTTTTTTTT
TGAGATAGAGTTTCACTCTTATTGCCTAGGCTGGTGTGCAATGGTGCATCTCGGCTCAC
AGCAACCTCCACCTCCAGTTCAAGCGATTCTTTGCTCAGCCTCCCAAGTAGCTGGG
ATTACAGGCATGCGCCACCATGCCCACTAATTTGTATTTTAGTAGAGATGGGGGTTT
TCCATGTTGGTCAGGTTGGTCTTGAACCTCCGACCTCAGGTGATCCGCCACCTCAGCCT

19244 GTGGCATTATTGGTTCATATTTTTATTTTTAGACTTCCTTAATGCAAAACATATACAGT
TGATCCTCATTATTTGGGGATTCTGTATTTGCAAATTTGCCTACTCAATAAAATTTATCC
CCAAAGTAACCCCAAAATATATACTCACAGTACTTTCCAGGCATTATGGACATGCACA
GAGCAGTGAAAACTTGAGTTGCTCAGCATGTACATTCCTAGCTAGTAGAATAAGGCAAT
ACTCTGCCTTCTGTTTCAGCTCTCATACTATTAAGTAGCAAGTATCCCTTTCAAGGTCT
[G,A]
TTTTGTGCCAGTTTTTGCAATTTTGTATTTTGTGTTGTAATTTCTTTTTAAAATGTTCC
CCAAAGGTAGTGCTGAAGTGCTGTCTAGTGTTCTAAGTGCAAGAAAGCCATAGCATGCC
TTATGGAGAAAATATATGCGTTGGATAAGCTTTGCCCCAAATCAATGTTAGTGAATCAA
CAGCACACATTAATGAGGTGCCTTCAAACAGAAACAGACATAAGACATGGTTATGTATT
AATCAGTTGATGAAAGTGTGTAATCAGAGGCTCACAGGAACCTAACCCTGTTTTCTG

19387 CTCACAGTACTTTCCAGGCATTTCATGGACATGCACAGAGCAGTGAAAACTTGAGTTGC
TCAGCATGTACATTCCTAGCTAGTAGAATAAGGCAATACTCTGCCTTCTTGTTTCAGCTC
TCATACTATTAAGTAGCAAGTATCCCTTTCAAGGTCTATTTTGCCAGTTTTTGCAATTT
TTGTATTTTGTGTTGTAATTTCTTTTTAAAATGTTCCCCAAAGGTAGTGCTGAAGTGCT
GTCTAGTGTTCTAAGTGCAAGAAAGCCATAGCATGCCTTATGGAGAAAATATATGCGTT
[T,G]
GATAAGCTTTGCCCCAAATTCATGTTAGTGAATCAACAGCACACATTAATGAGGTGCC
TTCAAACAGAAACAGACATAAGACATGGTTATGTATTAATCAGTTGATGAAAGTGTGTA
ATCAGAGGCTCACAGGAACCTAACCCTGTTTTCTGTAGGAACAATGGTTTGGTATTG
CTAATTCAGTGTTTGAATGAATATAGAATTTATGGAAGATGATTGCTGTGAATAATGA
GAATTAACCATATCTCTTAAGAGTGCATTTCTAAGGAGAATATTGAGAAGGGTATTG

19447 TCAGCATGTACATTCCTAGCTAGTAGAATAAGGCAATACTCTGCCTTCTTGTTTCAGCTC
TCATACTATTAAGTAGCAAGTATCCCTTTCAAGGTCTATTTTGCCAGTTTTTGCAATTT
TTGTATTTTGTGTTGTAATTTCTTTTTAAAATGTTCCCCAAAGGTAGTGCTGAAGTGCT
GTCTAGTGTTCTAAGTGCAAGAAAGCCATAGCATGCCTTATGGAGAAAATATATGCGTT
GGATAAGCTTTGCCCCAAATTCATGTTAGTGAATCAACAGCACACATTAATGAGGTGC
[C,G]
TTCAAACAGAAACAGACATAAGACATGGTTATGTATTAATCAGTTGATGAAAGTGTGTA
ATCAGAGGCTCACAGGAACCTAACCCTGTTTTCTGTAGGAACAATGGTTTGGTATTG
CTAATTCAGTGTTTGAATGAATATAGAATTTATGGAAGATGATTGCTGTGAATAATGA
GAATTAACCATATCTCTTAAGAGTGCATTTCTAAGGAGAATATTGAGAAGGGTATTG

20076 TCTCTCAGAATCCTGTCTCTCCTCCAGGGTCTTTCTCCAAGAAAGTCTATCCTTTAC
CACTAACAGTAATTTGGTCTTCTCTTTTTCTGGAGAAGTCAGCTGTTTATGCTGCTTC

(SEQ ID NO:64)

(SEQ ID NO:65)

(SEQ ID NO:66)

(SEQ ID NO:67)

FIGURE 3GG



GCTCTAATTTCCCTAGTATTTAAAAATTTTCTGTCTTTTGTTGTTCTTTTATCCTTGCTCC
CTTATTTTTACTGCCAGATTTTTATTTTTATTTATTTTATTTTGAGATGGAGTCTCACTC
TGTCACCCAGGCTGGGGTGCA GTGGCGCATCTCAGCTCACTGCAACCTCCGCTCCAG
CTTCAAGCAATTTTTCTCTTTTAGCCTCCCAAGTAGCTGGGATTATGGGCACCTGCCACC
ATGCTCTGGCTGATTTTTCTATTTTTAGTAGAGACGGGGTTTTACCATGTTGGCCACACTG

CACTCTGTCACCAGGCTGGGGTGCACTGGCGCATCTCAGCTCACTGCAACCTCCGCCT
 CCCAGCTTCAAGCAATTTTCCTCTTTTAGCCTCCCAAGTAGCTGGGATTATGGGCACCTG
 CCACCATGCCTGGCTGATTTTTCTATTTTAGTAGAGACGGGGTTTCACCATGTTGGCCA
 CACTGCTCTTAAGTGTGACCTCAGGTGAACACCCGCCTCAGCCTCCAAAAGTGCTGG
 GATTGCAGGTGTGAGTCACTGTGCCTGGCCTTTTACTGCCAGATTTTAAAGAATAGTC
 [T.-]

GTGCCTTTAGCTCTAATTCCTCATTCTACTCTCTCTTAACTCAGTCATAATGATGTTT
TGCATAGTAAATGTCTAGTAATTTATTA AAAAATGTAGAAATAGGTACTTTTAAAATGAAT
AGATCCTACTTTAATTGAATTTATCTTGGAGTAGAATATCTGATTTGGATTTTAGTTC
TGCTACTTCTTAATTACACTTCTTGGTAAGGCCACTTGTGAAGTCAGTCTCTTTGGAGGA
ATATTATTTATCTATAAGGCTGTTACAAATTAAGTCAATTTAAAAAATGTGATTTATTTT

TAGTAATTTATTAAAAATGTAGAAATAGGTA CTTTAAAATGAATAGATCCTACTTTAAT
 TGAATTTATCTTGGAGTTAGAATATCTTGATTTGGATTTTAGTCTGCTACTTCTTAATT
 ACATTACTTGGTAAGGCCACTTGTGAAGTCAGTCTCTTTGGAGGAATATTATTTATCTAT
 AAGGCTGTTACAATTACTGAATTTTAAAAAATGTGTATTTATTTTTTAATGTATTTGTTA
 CATTTT TAGTATTGATGTTGGGATAGGCATTTAAGCAAGTCTATAACTCACCTACATGCA
 [T.C]

AATTTTGCCTTAATCAGTTTAAAGCTTCTCTTAAATGAGAGATTTGAAATTCATAATTT
 CTGTGGTCTTATCAGTCTGAGTTTTATTTTTGCCCTTTTATTTTTTAAAGGAAAA
 ATTGAGGCTTCAGAAATGTCCAGTCTCTCCAGACACTGGGTCTGACTATTTCTGAACAA
 CAAGCAGAGTGTATTCTTCAAAGTAAAGCTCTCATGTTGGTCAACAATTGACTTTCACT
 TTAATATCCTGCATTAGAACTCTGTGTTGTAAGTGTGGCTTAAACACCTCCCTAGTC

GAGT TGAATATCTTGATTTGGATTTT AGT TCTGCTACTTCTTAATTACATTACTTGGTA
AGGCCACTTGTGAAGTCAGTCTCTTTGGAGGAATATTATTTATCTATAAGGCTGTTACAA
TTACTGAATTTTAAAAAATGTGTATTTATTTTTAATGTATTTGTTACATTTT TAGTATT
GATGTTGGGATAGGCATTTAAGCAAGTCTATAACTCACCTACATGCATAATTTTGCCTTA
ATCAGTTTAAAGCTTTCTCTTAAATGAGAGATTTGAAATTCATAATTTCTGTGGTCTTA
[T.C]

CAGTTCCTGAGTTTTATTTTTTGCCTTTTATTTTTTAAAGGAAAAAATGAGGCTTCAG
AAATTGTCCAGTCTCTCCAGACACTGGGTCTGACTATTTCTGAACAACAAGCAGAGTTGA
TTCTTCAAAGGTAAGCTCTTCATGTTGGTCAACAATTGACTTTCACTTTAATATCTCGTA
TTAGAATCTCTGTGTTGTAAGTGTGGCTTTAAACACCTCCCTAGTCTTCATTATGTATA
TCCAAGATCTTTTGTCTTTTCTCCCATTCATTTTGTATGTACATTTATCTAAAG

GTATTGATGTTGGGATAGGCATTTAAGCAAGTCTATAACTCACCTACATGCATAATTTTG
CCTTAATCAGTTTAAAGCTTTCTCTTAAATGAGAGATTTGAAATTCATAATTTCTGTGGT
TCTTATCAGTTCTGAGTTTTATTTTTTGCCCTTTTATTTTTTAAAGGAAAAATTGAGG
CTTCAGAAATTGTCCAGTCTCTCCAGACACTGGGTCTGACTATTTCTGAACAACAAGCAG
AGTTGATTCCTCAAAGGTAAGCTCTTCATGTTGGTCAACAATTGACTTTCACCTTAATAT
[C...T]

CTGCATTAGAACTCTGTGTTTGTAAAGTGTGGCTTTAAACACCTCCCTAGTCTTCATTAT
GTATATCCAAGATCTTTTTGTCTTTTTCTCCATTCATTTTGTATGTGTACATTTATC
TAAAGTGTAAGAATGGGAAGTGTAAGCTCAGACTGGACTCTTTCTTTCAAGGCCCTCAAAG
GATAGTGGAAATGGCAGGAAGTAAGGTTTTAACTCCATAGATGAGGAGCTGAAGAGTTTG
GTGTGCTTTTTCTCCATTTGATTTCTAATGTGACAGTAAATCATTTGATTTCAAACATA

(SEQ ID NO:72)

FIGURE 3HH



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21701

CATTGATTCAAACCTAAGAAGACTAGCAGATTATCATCATTTATTTAACCTAGATGTGACTG
GAAAAAAGGGAAATTAAGCTCTCCAAGCTAACAAAGAAATACCTGTTTAACTTTCA
GAAAAACAGAAATGCAAAATTTGAACCTTATTGTCTGGGGCAATCAGTTTGACTATTTAAGT
CAGACTTTTATACTCTTAATGTTTTGTTTCATGGGATAGAGCAGTAATCTCTGCAGCCCA
GGTGCTCTCAAATACTCTGTTGCTATAAACACAGGGCAGGAAGTATTTTTATGATAAC
[G,A]
TAAAAACAGAAAAGGACAATTATATTGTATTAATATTGTTGTGAATATTTTCAGTCCTCAC
ATTGTCTAAAAATCTTTCTAAATGGCTTTGTTATTGAATTTATCTCATTTTATATCTGTG
CCAACAGCATTTTCTCCTTTCTTTTACATAATTTCTTTTACAAACAGCTGCTCAAGAGGA
AGGCTCAAAGTCTCAAGGCTGAGCACGTAATGACTTTTGTAGTACTAGATGAGAAGGGC
TTTCTGAGGAAATGAAAACCTAAAACATGAAAAGAAGATAAACAGAATTTGGACAGTGA

(SEQ ID NO:73)

21710

AAACTAAGAAGACTAGCAGATTATCATCATTTATTTAACCTAGATGTGACTGGAAAAAGG
GAAATTAAGCTCTCCAAGCTAACAAAGAAATACCTGTTTAACTTTAGAAAAACAGA
AATGCAAAATTTGAACCTTATTGTCTGGGGCAATCAGTTTGACTATTTAAGTCAAGCTTTT
ATACTCTTAATGTTTTGTTTCATGGGATAGAGCAGTAATCTCTGCAGCCAGGTGCTCTC
AAATACTCTGTTGCTATAAACACAGGGCAGGAAGTATTTTTATGATAACGTAAAAACAG
[A,-]
AAAGGACAATTATATTGTATTAATATTGTTGTGAATATTTTCAGTCCTCACATTGTCTAA
AAATCTTTCTAAATGGCTTTGTTATTGAATTTATCTCATTTTATATCTGTGCCAACAGCA
TTTTCATCCTTTCTCTTACATAATTTCTTTTACAAACAGCTGCTCAAGAGGAAGGCTCAA
GTCTCAAGGCTGAGCACGTAATGACTTTTGTAGTACTAGATGAGAAGGGCTTTCTGAG
GAAATGAAAACCTAAAACATGAAAAGAAGATAAACAGAATTTGGACAGTGAGATATAGAG

(SEQ ID NO:74)

21826

CAGAAATGCAAAATTTGAACCTTATTGTCTGGGGCAATCAGTTTGACTATTTAAGTCAGAC
TTTTATACTCTTAATGTTTTGTTTCATGGGATAGAGCAGTAATCTCTGCAGCCAGGTGC
TCTCAAATACTCTGTTGCTATAAACACAGGGCAGGAAGTATTTTTATGATAACGTAAA
ACAGAAAAGGACAATTATATTGTATTAATATTGTTGTGAATATTTTCAGTCCTCACATTG
TCTAAAAATCTTTCTAAATGGCTTTGTTATTGAATTTATCTCATTTTATATCTGTGCCAA
[C,T]
AGCATTTTCATCCTTTCTCTTACATAATTTCTTTTACAAACAGCTGCTCAAGAGGAAGGCT
CAAAGTCTCAAGGCTGAGCACGTAATGACTTTTGTAGTACTAGATGAGAAGGGCTTTCC
TGAGGAAATGAAAACCTAAAACATGAAAAGAAGATAAACAGAATTTGGACAGTGAGATAT
AGAGCATATAATATTCTGCTTCTAAAGTAATATTCTTCTAGGAAAGTGAGGGCGTTTCCC
TGGCTGTTAGGCCAGAAATCATATTTCTATATTTCTTTGATAGCTTTAGGAATAATGCA

(SEQ ID NO:75)

21840

TGAACCTTATTGTCTGGGGCAATCAGTTTGACTATTTAAGTCAGACTTTTATACTCTTAA
TGTTTTGTTTTCATGGGATAGAGCAGTAATCTCTGCAGCCAGGTGCTCTCAAATACTCTG
TTGCTATAAACACAGGGCAGGAAGTATTTTTATGATAACGTAAAACAGAAAAGGACAA
TTATATTGTATTAATATTGTTGTGAATATTTTCAGTCCTCACATTGTCTAAAAATCTTTT
TAAATGGCTTTGTTATTGAATTTATCTCATTTTATATCTGTGCCAACAGCATTTTCATCC
[-,T]
TTCTCTTACATAATTTCTTTTACAAACAGCTGCTCAAGAGGAAGGCTCAAAGTCTCAAGGC
TGAGCACGTAATGACTTTTGTAGTACTAGATGAGAAGGGCTTTCTGAGGAAATGAAAA
CCTAAAACATGAAAAGAAGATAAACAGAATTTGGACAGTGAGATATAGAGCATATAATAT
TCTGCTTCTAAAGTAATATTCTTCTAGGAAAGTGAGGGCGTTTCCCTGGCTGTTAGGCCA
GAAATCATATTTCTATATTTCTTTGATAGCTTTAGGAATAATGCAAATTTCTAAGCCCAA

(SEQ ID NO:76)

21841

GAACCTTATTGTCTGGGGCAATCAGTTTGACTATTTAAGTCAGACTTTTATACTCTTAA
GTTTTGTTTTCATGGGATAGAGCAGTAATCTCTGCAGCCAGGTGCTCTCAAATACTCTGT
TGCTATAAACACAGGGCAGGAAGTATTTTTATGATAACGTAAAACAGAAAAGGACAA
TATATTGTATTAATATTGTTGTGAATATTTTCAGTCCTCACATTGTCTAAAAATCTTTT
AAATGGCTTTGTTATTGAATTTATCTCATTTTATATCTGTGCCAACAGCATTTTCATCCT
[-,C,T]
TCTCTTACATAATTTCTTTTACAAACAGCTGCTCAAGAGGAAGGCTCAAAGTCTCAAGGC
GAGCACGTAATGACTTTTGTAGTACTAGATGAGAAGGGCTTTCTGAGGAAATGAAAAC
CTAAAACATGAAAAGAAGATAAACAGAATTTGGACAGTGAGATATAGAGCATATAATATT
CTGCTTCTAAAGTAATATTCTTCTAGGAAAGTGAGGGCGTTTCCCTGGCTGTTAGGCCAG

FIGURE 3II



AAATCATATTCCTATATTTTCTTTGATAGCTTTAGGAATAATGCAAATTCTAAGCCCAAG (SEQ ID NO:77)

21843

ACCTTATTGTCTGGGGCAATCAGTTTGACTATTTAAGTCAGACTTTTATACTCTTAATGT
TTTGTTCATGGGATAGAGCAGTAATCTCTGCAGCCAGGTGCTCTCAAATACTCTGTTG
CTATAAACACAGGGCAGGAAGTATTTTTTATGATAACGTAAAACAGAAAAGGACAATTA
TATTGTATTAATATTGTTGTGAATATTTTTCAGTCTCACATTGTCTAAAAATCTTTCTAA
ATGGCTTTGTTATTGAATTTATCTCATTTTATATCTGTGCCAACAGCATTTTCATCCTTT
[-,C]

TCTTCATAATTTCTTTTACAAACAGCTGCTCAAGAGGAAGGCTCAAAGTCTCAAGGCTGA
GCACGTAATGACTTTTGTAGTACTAGATGAGAAGGGCTTTCTGAGGAAATGAAAACCT
AAAACATGAAAAGAAGATAAACAGAAATTTGGACAGTGAGATATAGAGCATATAATATTCT
GCTTCTAAAGTAATATTCTTCTAGGAAAGTGAGGGCGTTCCCTGGCTGTTAGGCCAGAA
ATCATATTCCTATATTTTCTTTGATAGCTTTAGGAATAATGCAAATTCTAAGCCCAAGCT

(SEQ ID NO:78)

22045

ATATTTTCAGTCTCACATTGTCTAAAAATCTTTCTAAATGGCTTTGTTATTGAATTTAT
CTCATTTTATATCTGTGCCAACAGCATTTTCATCCTTTCTCTTCATAATTTCTTTTACAA
ACAGCTGCTCAAGAGGAAGGCTCAAAGTCTCAAGGCTGAGCACGTAATGACTTTTGTAG
TACTAGATGAGAAGGGCTTTCTGAGGAAATGAAAACCTAAAACATGAAAAGAAGATAAA
CAGAATTTGGACAGTGAGATATAGAGCATATAATATTCTGCTTCTAAAGTAATATTCTTC
[C,A,T]

AGGAAAGTGAGGGCGTTCCCTGGCTGTTAGGCCAGAAATCATATTCCTATATTTTCTTT
GATAGCTTTAGGAATAATGCAAATTCTAAGCCCAAGCTTCAGAATAGACTAAGAAGTATT
AGCTTAGCTGCCATGACAAAATACCATAGGCTGGATGCATTAAACAATGGAAATTTAGTT
TTTCACAGGTCTGGGAGCTGGGAAGTTTAAGATGAGAGTGCCAGCATGGTTGGGTTGTAG
TGAGGGCTCTCTTTCTGGCTTGAGATAGACCCCTTCTCACTGTATTGTATATGGCAGA

(SEQ ID NO:79)

22061

CATTGTCTAAAAATCTTTCTAAATGGCTTTGTTATTGAATTTATCTCATTTTATATCTGT
GCCAACAGCATTTTCATCCTTTCTCTTCATAATTTCTTTTACAAACAGCTGCTCAAGAGG
AAGGCTCAAAGTCTCAAGGCTGAGCACGTAATGACTTTTGTAGTACTAGATGAGAAGGG
CTTTCTGAGGAAATGAAAACCTAAAACATGAAAAGAAGATAAACAGAAATTTGGACAGTG
AGATATAGAGCATATAATATTCTGCTTCTAAAGTAATATTCTTCTAGGAAAGTGAGGGCG
[G,T]

TTCCCTGGCTGTTAGGCCAGAAATCATATTCCTATATTTTCTTTGATAGCTTTAGGAATA
ATGCAAATTCTAAGCCCAAGCTTCAGAATAGACTAAGAAGTATTAGCTTAGCTGCCATGA
CAAAATACCATAGGCTGGATGCATTAAACAATGGAAATTTAGTTTTTCACAGGTCTGGGA
GCTGGGAAGTTTAAGATGAGAGTGCCAGCATGGTTGGGTTGTAGTGAGGGCTCTCTTTCT
GGCTTGAGATAGACCCCTTCTCACTGTATTGTATATGGCAGAGAGAGAGAGAGAGAGA

(SEQ ID NO:80)

22348

GAAAGTGAGGGCGTTTCCCTGGCTGTTAGGCCAGAAATCATATTCCTATATTTTCTTTGA
TAGCTTTAGGAATAATGCAAATTCTAAGCCCAAGCTTCAGAATAGACTAAGAAGTATTAG
CTTAGCTGCCATGACAAAATACCATAGGCTGGATGCATTAAACAATGGAAATTTAGTTTT
TCACAGGTCTGGGAGCTGGGAAGTTTAAGATGAGAGTGCCAGCATGGTTGGGTTGTAGTG
AGGGCTCTCTTTCTGGCTTGAGATAGACCCCTTCTCACTGTATTGTATATGGCAGAGA
[-,A,G]

AGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGGGGATCTTTCTCTTGCTTTCTATTATAAGG
CCATAGTCCTGTTGGATCAGGGTTCCATTCTTATGACTTTATTTGACTTTACCCCCCTAA
GATGCTATCTCCAGATATAATCACACGGTGGGTTAGGGCTCAACATTTGGATTTGGGAG
GGACACAGCTCAGTCCATAGCAAAGGATAATGCAGAGGGTTGGATATTTAAAAGTAGCTA
CACAATTTTTAATATAAATATTTTATGGTAACTTTTTTTTTTTTTTGGAGATGGAGTCTAG

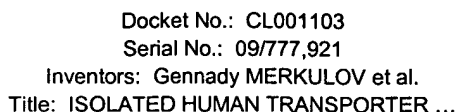
(SEQ ID NO:81)

22682

ATCTTTCTCTTGCTTTCTATTATAAGGCCATAGTCCTGTTGGATCAGGGTTCCATTCTTA
TGACTTTATTTGACTTTACCCCCCTAAGATGCTATCTCCAGATATAATCACACGGTGGGT
TAGGGCTCAACATTTGGATTTGGGAGGGACACAGCTCAGTCCATAGCAAAGGATAATGC
AGAGGGTTGGATATTTAAAAGTAGCTACACAATTTTTAATATAAATATTTTATGGTAACT
TTTTTTTTTTTTTGGAGATGGAGTCTAGCTCTGTTGCCAGGCTGGAGCGCAATGGTGCGA
[A,G,T]

CTCAGCTCACTGCAACCTCCGCCTCCAGGTTCAAGCAATTCTCCTGCCTCAGCCTCCTG
AGTAGTTGGGACTATAGGCACGCGCCACCACGCCTGGCTATTTTTTTTTTATTTTTACTA

FIGURE 3JJ



25390 AGTGTCTGGGATTACAGGTGTGAGCCACCACCCCTGGCCAATGTTTGGTATTTATCTTTAG
GTGCTCTGATGTTGGGTTTCATATATATTTATAAAAAACAATAGCTACATAACTTATTAAG
GGATATGCAATATAAAATATATAAATTGTGACACTGAAAATTTAAATGGGAGGAGTGGG
GTAAAAGTACCTTCATATAACTTACTATTATATCCTCTTATTGAATTGACCTTTTATCA
TTATATAGGAACTTTGTTTCTCCTTTACAACCTCTGACTTAAAGTTTGTTTTATATGATA
[T,C]

FIGURE 3KK



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26060 AAGTAAAGTTACTCCTGCTCTCCTTTGGTTTCTGTTCCATGGAATATCTTTTTCCATTC
CTTCACCATCAGTCTGTGTGATTTTTACAGATGAAATGAGTCTGTATGGGCAGCATAT
AGTTGGATCTAGTTTTTTAATCCACTCAGACACTGTGTTTTGATTGGATAATTTAAT
CCATTGATGTTCAAGGTAATTATTGATAAGTAAGGACTTTGTACTACCATTITGCTTATT
GTTTCATGGTCTTTTATAGATCCTTTATTCTTTCTCCTCTCTTGCTGTCTTTTTTT

26060 GGTTTTTGGTTTGTGGTTACCAAGAGGTTACAAAAACATCTTAAGAGTTATAATAGTTT
ATTTTAACTTGATAACTTAATTTTTATTGCAAAAAACCCCCAAAAACAAAAAATCTACAC
TTTTACTTAATCCCCTGAAATTTTGAATTTTGTATGTCACAGTTTACCTCTTTTCATATT
GTGTATCCCTTAAATTTATTGTAGCTATTATTACTTTTAAATAGTTTTCTTTTCTACTAC
AGATGTAAGTGATTGTCATACCATTACAGTATTATTTGAATTTACCTGTGTACTTT
[C,T]
TTTTATCAGCCAGTTTTATACTTTTCTGATGTTTTTGTGTTACTCATTAGCATCTTTTTCT
TTCAGCTTGAGGAGCTCCTTTTACGTTTCTTATAAAATAGGTGCGGTCTGATTATCTCC
CTCAGCTATTGTTTGTCTGGGAAAGTATCTCCTTCATTTCTGAAGGACACTTTGCTGG
GTACATTACCCTTGGTTGGTATTTTTCTCCTTGAACGCTTTAAATATATCATCCCTTTCT
CTCCTGACCTGTTAGGTCTCTGCTGACCACTGCTGTTTCCAACCATATTGGGACTGTCTTA

(SEQ ID NO: 88)

30245 ATTTTAAACCATCCATTGTTTCTGCTTCTCTAGATAACCTGACTAATATATAATTGGTAT
GAAGTGATATCTCATGGCTTTGATTTATATTTCTTTCATGGCTAGTGACTTTTTTTGTAC
TTTTGGGATATTGTTATTATTATTATTATTACTAGTGTATACTTCTTCAGTAAAA
GTGTTAGAAACAATTTTTAAAGGCAGAATGTGACCAGAGTTTCTGTAGTTATATAACCA
TCATGGACCTTCCCTCAAGTGCTAAGCCATTAGTGTTACTCATGTCACTCCAAATGTCAG
[C,G]
TTGTTTTCTTCCATTTCACTGTCTCTTGTGTCCCAAACCTGAATTCATGGGAAAAACAT
CTGAATGGTGCTTAATATGGTTTGGATATTTGTCCCTCCAAATCTCATGTTGAAATATG
ACCTCCAGTGTGGAAAGTAGGGACTACTTGGGTACGAGAGTGATCCTTCATTAATGGC
TTGGTAATAAGTGAACCTCTATTATTCATGAAAGCTGGTTGTTGATAAGAGCTGGCATC
TCATTTCTTGTCTTCTCTCACCATCTGACACACTTGCTCACCTTTTTTCTCAGCCA

(SEQ ID NO: 89)

33664 TTCCAGAGTGTAGAAGTACACTGTCTATCCTTTCTAGGAGATCATTATAACACCAAAAG
CAGACAGTATATGAAACAGGGAAATTAGAGGCCAAGATACCTATGACTTATATGAAAAA
TTTAAAGAAAATATTAGCAAACCTGAATCAGCCATTTTAAAAAATATACCACAATCAATGC
ATTGATAAGAGCAGCTTAACAAAATTTGTTAGAAGGCATTAAAGAAGACTCAGTATAGAA
AAGATGTACCTTCTCTCAAATTTGGTGATAGAGATTCAATGCCATTAAAAAACCCACCT
[G,T]
GTTTTTTTGGGAACTTGTCAAGCTGAGTCTCAAATTTATATCAAAGAGCAAAGGCCTAA
GAATATCCAGGACATTCCTGAAGAACTGTAAGGAGCCAGGGGCTGCCCTATCAGATACC
AAGGGTGTATTAAAGCCATAACCAAGTCAAGTGTGTTTCTACAGAAACAGACAAGTTAA
CAAGTGAAACATAAATAGAGAGGCCAGAAACAGACCCATCCATTTTGGATTGTACAGT
GAAAGAAGTAGCTTTGCAAACTTTGGGAAAGGAGAGTGTGTGCAATAGATGATGCTCG

(SEQ ID NO: 90)

33883 TAAAGAAGACTCAGTATAGAAAAGATGTACCTTCTCTCAAATTTGGTGATAGAGATTCAA
TGCCATTAAAAAACCCACCTGGTTTTTTTGGGAACTTGTCAAGCTGAGTCTCAAATTT
ATATCAAAGAGCAAAGGCCTAAGAATATCCAGGACATTCCTGAAGAACTGTAAGGAGCCA
GGGGCCTGCCCTATCAGATACCAAGGGTTGTTATTAAGCCATAACCAAGTCAAGTGTGTT
TCTACAGAAACAGACAAGTTAAACAAGTGAACATAATAGAGAGCCAGAAACAGACCCAT
[C,A]
CATATTTTGGATTTGTACGTGAAAGAAGTAGCTTTGCAAACTTTGGGAAAAGGAGAGT
GTGTGCAATAGATGATGCTCGTGCTCATGCAGACAAAAAGGAAATTTGGGATACCTGCTC
TTACCGTACACAAACCAACCTAAACGTGAAAGTTAACTATAACAGCTTGAGGTGGTG
GGGAAGAAATATCTTTATCTCAGTGTAAGGAAGAATTTATTTTAAAGAAGACACAAAA
GGCCATACATAGGAATGAAAAGATTGAATTCAGCTGCATTAAAAAGATTAAATTCAGCTG

(SEQ ID NO: 91)

34373 TATCTTTATCTCAGTGTAGGGAAGAATTTATTTTAAAAAGAAGACACAAAAGGCCATACA
TAGGAATGAAAAGATTGAATTCAGCTGCATTAAAAAGATTAAATTCAGCTGCGTTAAAT
CAAGAGCATCTGTACTTGGACAGCATAGAGTGGAAGACAAAGAGAAGGTATTGCCAGC
TTATAACTTGAAGGATTAGAATGAATGATATAAAGAACTATGTAATAAGAAAAAGACAT

FIGURE 3LL



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ACAACCGGTTAGAAAAACGGGCAAAGACATGAACAGCATATTTACGTGAAGGAAACAGC
[G,A]
GTAGCAAATGAACATGGTAAGAGATGCTCAACACGTTTAGTAATTTGAAGGGAAATGCAA
GTTATACCCACAGCAAGACTATCTTATCTAGGAAGTTTGTCAATACCCTAAATGTTCTGT
GGTTTTAAGCTACAGAGTTTGTAAATTCATTTATTTATTCAATAAATACTCAGTGGCAGGC
ACTGTTTTAGAAACCTTGGTTATAACTTTGAATGAAATTAATAAATCCTTGCCTTGTG
GAGGATGCTTATGTGTGGGAGTTGGGTGGTGGGTCAAACAACAATTACATTAATAATAG
(SEQ ID NO: 93)

34558 ACTTGAAGGATTAGAATGAATGATATAAAGAACTATGTAATAAGAAAAAGACATACAAC
CGGTTAGAAAAACGGGCAAAGACATGAACAGCATATTTACGTGAAGGAAACAGCGGTAG
CAAATGAACATGGTAAGAGATGCTCAACACGTTTAGTAATTTGAAGGGAAATGCAAGTTA
TACCCACAGCAAGACTATCTTATCTAGGAAGTTTGTCAATACCCTAAATGTTCTGTGGTT
TTAAGCTACAGAGTTTGTAAATTCATTTATTTATTCAATAAATACTCAGTGGCAGGCACTG
[G,T]
TTTAGAAACCTTGGTTATAACTTTGAATGAAATTAATAAATCCTTGCCTTGTGGAGGA
TGCTTATGTGTGGGAGTTGGGTGGTGGGTCAAACAACAATTACATTAATAATAGAAAT
AGTGACATAAATAAACCTATAAATATTGCAACCCAGAGTTATATTATAAATGTAAGTAGT
GACTAGGACTCTCATGCAGATATACCTCTGTGCTGGGACAAATGAAAGTTTAAGTGAAT
TTCCCATATGCAAGTCAAATAAAGAGTACACTAGAAAAACAATAATGAATATCTGAA
(SEQ ID NO: 94)

43929 GGCATTTAAGTATTCTGCCATAGGGAAGTGTAAGTTGTAGGCTTTTACTTTTATAGG
TACTATATTGTCAAATAATCTCAGCACCTCATGGTTGCTAAGGATCTGTGCTCTGTTT
GGTCAGATTATGTTTATCTCTGGCATAAGGCATTTAACAATATTCATTAAAGGTTACAGA
ATCTTTTGTCTTCATCTGCTTAGCATTTCATACCAGTTTGTTCACCAAACCTTTCAA
TTTTGATTGTTTCATTAATATTCTGCATACTGATGTAACCAAGTTCTATTATTGTGCAA
[T,A]
CTGCTCCTGAAACCTTAGGAACTCTCTGAAGGAGTTTATTTATTTTGTGTTTTGTTT
TTGTTTTGTTTTGTTTTTGTGAGACGGAGTCTTGCTCTGTTGCCAGGCTAGAGTGAG
TGGTGCGATCTCGGCTCTCTGCAAACCTCGGCCTCGGGGTTACGCCATTCTCCTGCCTC
AGCCACCGGAGTAGCTGGGACTACAGGCACCCACCACTGCGCCTGGCTAATTTTTTTGT
ATTTTTAGTAGAGACGGGTTTACCCTGTTAGCCAGGATGGTCTCGATCTCCTGACCTT
(SEQ ID NO: 95)

44309 TTGAGACGGAGTCTTGCTCTGTTGCCAGGCTAGAGTGCAAGTGGTGCGATCTCGGCTCTC
TGCAAACCTCGGCCTCCGGGTTTACGCCATTCTCCTGCCTCAGCCACCGGAGTAGCTGGG
ACTACAGGCACCCACCACTGCGCCTGGCTAATTTTTTTTGTATTTTAGTAGAGACGGGG
TTTACCCTGTTAGCCAGGATGGTCTCGATCTCCTGACCTTGTAAATCCGCCCGCCTCGCC
TCCCAAAGTGCTGGGATTACAGGCGTGAGCCACTGTGCCCGCCTTTTTTTTTTTTTTTT
[T,-,C]
TTTATGGGCTTGCTCTTCTACACTTCAGATTTGACTAAATTAATATGCATTAAATGAAGT
CAGGAGTTCACATTGCCACTAGTAACAATGCCTAAGCTTACATAAAGCATTATAAATTTG
TTGGTGATTAGTGCTTCTCAGCTATGAGTATAAGATAATATTATACTAGTAGTTCAAGT
GCCTAGATAAATTTGACACTATGTGAAGTTTATTTACATAATTCTTACGGTATTTTTTA
AGGTAGTTGATAACAGTTGAGACTACAATTGTATCTCCATTTATTGATAGTAAATGAA
(SEQ ID NO: 96)

44997 GAATTGTAAAAATATTATTATAGAATTGTTTCTCTCAAACCTATAGTAATGTAGAATAGGT
TGAAGGGGTGATGATTGAAACAATACCTCTCCATTAGCTAAATTTTATATAGAATCTAT
TGCATGTTTTAAATGATAAGTCAGATTTATAAATAATTTTTATAACAGTAGGAAATGA
GTTTAGGGGTATTCACATACAGTTTAAATTTTATTTACATATTTAAACATATCATGGT
ATAAATATGATGTGGATATAAATTTGAGATAAAGGAAGTATTGTTTAAGAATTGATGAAC
[T,G]
AATTTCTTAAAGATGTCATCACCAGTTGGTTTTCTAGCCTTATGAAAAATGGTTGCAAT
AAAAAAGATTGACTATGATAAATGCTGCCCTTTCATTTTTAACCTAGACCAAGAGAAAAAC
ATACTGTGAATCTATGATGAATGAAAGAAAGTTGTAAGTGTGGTTTTGTATTTTTGTAA
TTACTGTTTATTTTCATTTCTGTGAAGTACTGACTTTGTTTATTGTGAGTAGACA
ACTTATAATCTATGACTCAAATTTGGTTTAGTATAAATCTAGGGAATGAAGTTCATATT
(SEQ ID NO: 97)

46538 TGTATACTTATGGTCAACACTTTTTATATTTGTCTGTAGATTTCTGTACAAAAAGATTC
TGACACTGTTTTAAGCCAGCATTCCTTCAGAAATGTACCCAAATCTCAAATTTATTTAGG

FIGURE 3MM



GGCAAAGCTAATGCTTTAAAGAAAAAGGAGA
[A, G]
GGGATTGGTGTGTGTTTTCTTTAGGAACAGTAGTAACCTTGACTTTTAGAGAACTTGAAT
AAGCATTTATTTTTCTTTGTCTATTTTATTGTGAAGTTTATTTATTTAAAATAAAAT
GGATTTCTCTGGAATTTAGTTTCTGCAAATTTGAGGAGTTTCCAAAGTCAACCTTCAGGT
TTGATACTTCTCTAGAAAGACTCACATAACTCACTGAAAGCTTATTACCCCTGGTTATGG
TTTATTACGGGGAAAAGATGCGGATGAAAATCAGTCAAGTAAAGAAGCACATAGGGCAGA (SEQ ID NO:97)

48153 TTATATCATTCTGCTTTTATTTTTAGGTTACGGTTCAAAATCAGACAAAATGAACATAT
TTGGTGGCTTTTCGACAGATGGTAAAAGAAGGAGGTATCCGCTCGCTTTGGAGGGGAAATG
GTACAAACGTCATCAAAATTGCTCCTGAGACAGCTGTTAAATCTGGGCATATGAACAGG
TAATTGTTATCACCCGTGGAATTTATTAACAAAGAGGAGTTAGTAAACGGATTCAATAAA
TGTTAATGTATAATGCTTTTGGGATTCTTGTTTAATACATGATAATCTTTCACATATAC
[T, C]
CCATAAGGAGGATCACTTATAGGAGATTAGACTAAATAAAATCAGAGATTTCTCATGACC
AAGTTATGGGATTCTTAATTCATCATATTATTTATAAAGTTTTTTTTTTCTAAGTAGTTC
TTAAAGGAAGGGTAGAATTTTAGTTTATTCTGAACTCCTGAGCAGAAGCAGCACACT
AACATAAGTTTTATGAAAGTGTACAATCTAACCTCTGGAAGGAAAACATAAGTTGAAG
TCCTTTGTGTAATTTGACGTTGCTGTAAAATTGAGCTGAGTTTGGAGTGACACCTCCATG (SEQ ID NO:98)

48288 AAATTGCTCCTGAGACAGCTGTTAAATCTGGGCATATGAACAGGTAATTGTTATCACCC
GTGGAATTTATTAACAAAGAGGAGTTAGTAAACGGATTCAATAAATGTTAATGTATAATG
CTTTTGGGATTCTTGTTTTAATACATGATAATCTTTCACATATACCCCATAGGAGGATC
ACTTATAGGAGATTAGACTAAATAAAATCAGAGATTTCTCATGACCAAGTTATGGGATTCT
TTAATTCATCATATTATTTATAAAGTTTTTTTTTTCTAAGTAGTTCCTAAAGGAAGGGTA
[G, T]
AATTTTAGTTTTATTCTGAACTCCTGAGCAGAAGCAGCACACTAACATAAGTTTTATG
AAAGTGTACAATCTAACCTCTGGAAGGAAAACATAAAGTTGAAGTCCTTTGTGTAATTT
GACGTTGCTGTAAAATTGAGCTGAGTTTGGAGTGACACCTCCATGAAGGCAGGGGCGTGG
CTTCTCCCATGTACTCCAGCACCTAGACAGAGCTTGGCATGTGATAAGTTTCAAGCGA
GTGTTGAATGAGTCAATGAATGAACAAATGCATTTACCTCTGAATCACTTCTCTGTCGGC (SEQ ID NO:99)

48412 TGGGATTCTTGTTTTAATACATGATAATCTTTCACATATACCCCATAGGAGGATCACTT
ATAGGAGATTAGACTAAATAAAATCAGAGATTTCTCATGACCAAGTTATGGGATTCTTAA
TTCATCATATTATTTATAAAGTTTTTTTTTTCTAAGTAGTTCCTAAAGGAAGGGTAGAAT
TTTAGTTTATTCTGAACTCCTGAGCAGAAGCAGCACACTAACATAAGTTTTATGAAA
GTGTCACAATCTAACCTCTGGAAGGAAAACATAAAGTTGAAGTCCTTTGTGTAATTTGAC
[G, A]
TTGCTGTAAAATTGAGCTGAGTTTGGAGTGACACCTCCATGAAGGCAGGGGCGTGGCTTC
TTCCCATGTACTCCAGCACCTAGACAGAGCTTGGCATGTGATAAGTTTCAAGCGAGTGT
TGAATGAGTCAATGAATGAACAAATGCATTTACCTCTGAATCACTTCTCTGTCGGCTTTT
GTTAACTTGGATTATTTGAGCTATTGCTTCAGCCTAACTCAATGTAAAGGGGAAATACAG
AGGTAAGTTTATAGAGTTTGGTTCTCTTATGGTCATTAGCAGAACTGTCTAGTTGAGCA (SEQ ID NO:100)

48446 CATATACCCCATAGGAGGATCACTTATAGGAGATTAGACTAAATAAAATCAGAGATTTCT
TCATGACCAAGTTATGGGATTCTTAATTCATCATATTATTTATAAAGTTTTTTTTTTCTA
AGTAGTTCCTAAAGGAAGGGTAGAATTTAGTTTATTCTGAACTCCTGAGCAGAAGC
AGCACACTAACATAAGTTTTATGAAAGTGTACAATCTAACCTCTGGAAGGAAAACATA
AGTTGAAGTCCTTTGTGTAATTTGACGTTGCTGTAAAATTGAGCTGAGTTTGGAGTGACA
[C, G]
CTCCATGAAGGCAGGGGCGTGGCTTCTTCCCATGTACTCCAGCACCTAGACAGAGCTTG
GCATGTGATAAGTTTCAAGCGAGTGTGTAATGAGTCAATGAATGAACAAATGCATTTACC
TCTGAATCACTTCTCTGTCGGCTTTTGTAACTTGGATTATTTGAGCTATTGCTTCAGCC
TAACTCAATGTAAAGGGGAAATACAGAGGTAAGTTTTAGAGTTTGGGTTCTCTTTATGGT
CATTAGCAGAACTGTCTAGTTGAGCAGCCACAGATTATGTTTTCCATTATTTATTCATC (SEQ ID NO:101)

48456 ATAAGGAGGATCACTTATAGGAGATTAGACTAAATAAAATCAGAGATTTCTCATGACCAA
GTTATGGGATTCTTAATTCATCATATTATTTATAAAGTTTTTTTTTTCTAAGTAGTTCCTT

FIGURE 3NN



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AAAGGAAGGGTAGAATTTTAGTATTATTCTGAATCCTGAGCAGAAGCAGCACA
CATAAGTTTTATGAAAGTGTCACAATCTAACCTCTGGAAGGAAAACTATAAGTTGAAGTC
CTTTGTGTAATTTGACGTTGCTGTAAAATTGAGCTGAGTTTGGAGTGACACCTCCATGAA
[g,c]
GCAGGGGCGTGCTTCTTCCCCATGTACTCCAGCACCTAGACAGAGCTTGGCATGTGATA
AGTTTCAAGCGAGTGTTGAATGAGTCAATGAATGAACAAATGCATTTACCTCTGAATCAC
TTCTCTGTGGCTTTTGTAACTTGGATTATTTGAGCTATTGCTTCAGCCTAACTCAATG
TAAAGGGGAAATACAGAGGTAAGTTTAGAGTTTGGGTTCTCTTATGGTCATTAGCAGA
ACTGTCTAGTTGAGCAGCCACAGATTATGTTTTCCATTATTTATCCATCATTGTTTTATC

(SEQ ID NO:102)

48789

GCACCTAGACAGAGCTTGGCATGTGATAAGTTTCAAGCGAGTGTTGAATGAGTCAATGAA
TGAACAAATGCATTTACCTCTGAATCACTTCTCTGTGGCTTTTGTAACTTGGATTATT
TGAGCTATTGCTTCAGCCTAACTCAATGTAAAGGGGAAATACAGAGGTAAGTTTAGAGT
TTGGGTTCTCTTATGGTCATTAGCAGAACTGTCTAGTTGAGCAGCCACAGATTATGTTT
TCCATTATTTATCCATCATTGTTTATCAAGGACTGTAAAGGGCCTTGAAATCAACTCCC
[c,-]
CCCCATAGTTTTTGTATTATTCATGTAGATTTTAGATTATTCTGGAGAGTGTTTTGTT
CTTGAGCAACAGAATACTCTTGAGAAGATTACGAAGTCCAGTGGTATCCTTTTCTTTGCC
TAGGAAATAGAGAAGCAAAAAAAAAAAAAAAAAAATTAAAGAAATCTAGTCTCCAGG
ATTTTAATTAGAACCTATCCTTGGGAAGGCTATTTTCTTATATGAAGGTTTGAAGATTC
AAATCATGATTATTAAGGGCTAATGTTTGAGATACCCTTAGGTTATTCTGACCACATACT

(SEQ ID NO:103)

48859

CATTTACCTCTGAATCACTTCTCTGTGGCTTTTGTAACTTGGATTATTTGAGCTATTG
CTTCAGCCTAACTCAATGTAAAGGGGAAATACAGAGGTAAGTTTAGAGTTTGGGTTCTC
TTTATGGTCATTAGCAGAACTGTCTAGTTGAGCAGCCACAGATTATGTTTTCCATTATTT
ATTCCATCATTGTTTATCAAGGACTGTAAAGGGCCTTGAAATCAACTCCCCCCCCCATAG
TTTTTGATTATTCATGTAGATTTTAGATTATTCTGGAGAGTGTTTTGTTCTTGAGCAA
[g,c]
AGAATACTCTTGAGAAGATTACGAAGTCCAGTGGTATCCTTTTCTTGCCTAGGAAATAG
AGAAGCAAAAAAAAAAAAAAAAAAATTAAAGAAATCTAGTCTCCAGGATTTTAATTA
GAACCTATCCTTGGGAAGGCTATTTTCTTATATGAAGGTTTGAAGATTCAAATCATGAT
TATTAAGGGCTAATGTTTGAGATACCCTTAGGTTATTCTGACCACATACTTGGATTTTAT
GATAGGAAAGCCACAGCCTAAAATAAATAAATACTCAATGCAGTTATTTAGTATGCAAG

(SEQ ID NO:104)

49126

GATTATTCTGGAGAGTGTTTTGTTCTTGAGCAACAGAATACTCTTGAGAAGATTACGAAG
TCCAGTGGTATCCTTTTCTTGCCTAGGAAATAGAGAAGCAAAAAAAAAAAAAAAAAAAAA
ATTAAGAAATCTAGTCTCCAGGATTTTAATTAGAACCTATCCTTGGGAAGGCTATTTT
CCTTATATGAAGGTTTGAAGATTCAAATCATGATTATTAAGGGCTAATGTTTGAGATACC
CTTAGGTTATTCTGACCACATACTTGGATTTTATGATAGGAAAGCCACAGCCTAAAATAA
[A,g]
TAAATACTCAATGCAGTTATTTAGTATGCAAGAAGTTTGGTATTTTGAAGAAAGTCCAT
GGGTATTGCAAGCAAATATGCACATTTTGCTTTATGCCATTTGTGAGATTCTTACCTTGG
ATACCACCAACAGGCATCCTCTGCTTCTGTCCACCAAGCTCCTTCTGAGACCTCTTTA
TAGTATTGTGATTTCTGCACACTAACTTTCTTAGACATGAAGAGAAAGCTGTCTACACAG
TGTGGTGTAGTTTTCTTATGGGCTCTGGACCTATGGTGCTGTTTTCTCTCTCTCTGCTGA

(SEQ ID NO:105)

49378

TGACCACATACTTGGATTTTATGATAGGAAAGCCACAGCCTAAAATAAATAAATACTCAA
TGCAGTTATTTAGTATGCAAGAAGTTTGGTATTTTGAAGAAAGTCCATGGGTATTGCAA
GCAATATGCACATTTTGCTTTATGCCATTTGTGAGATTCTTACCTTGGATACCACCAAC
AGGCATCCTCTGCTTCTGTCCACCAAGCTCCTTCTGAGACCTCTTTATAGTATTGTGA
TTTCTGCACACTAACTTTCTTAGACATGAAGAGAAAGCTGTCTACACAGTGTGGTGTAGT
[T,g]
TTCTTATGGGCTCTGGACCTATGGTGCTGTTTTCTCTCTCTCTGCTGAAGGTCCATTCT
CCCTCGGGGCTCTCTAAAGCCACCTTCTGTGACAAGCATATACTAAGCATCTCAATCA
AAGCCAGTTCTCCCCTGTCCAGCCTCCCTCGAGTGCTGAATTGCAGAATATCCCATTTT
TCATTGGATGATGGAAGCCCATTTGTTTTCCAGTGGATTGTAATTAATCTCGGGGTAAA
TAGGCTGTATATATTCTCAAATTTCCAGAGTATGTAAGTGGTCACTTTTAGATTGAGA

(SEQ ID NO:106)

FIGURE 300



- 49482 TCCATGGGTATTGCAAGCAAATATGCACATTTTGCTTTATGCCATTTGTGAGATTCTTAC
CTTGGATACCAACAGGCATCCTCTGCTTCTGTCCACCAAGCTCCTTCCTGAGACCT
CTTTATAGTATTGTGATTTCTGCACACTAACTTTCTTAGACATGAAGAGAAAGCTGTCTA
CACAGTGTGGTGTAGTTTCTTATGGGCTCTGGACCTATGGTGCTGTTTTCTCTCCTCT
GCTGAAGGTCCATTATCCCTCGGGGCTCTCTAAAAGCCACCTTCTGTGACAAGCATAT
[A,C]
CTAAGCATCTCAATCAAAGCCAGTTCTCCCCTGTCCAGCCTCCCTCGAGTGCTGAATTG
CAGAATATCCCATTTTTCATTGGATGATGGAAAACCCATTGTTTTCCAGTGGATTGTAA
ATTACTTCGGGGTAAATAGGCTGTATATATTCTCAAATTTCCAGAGTATGTAAGT
CACTTTTAGATTGAGATAGATTTTGTTCCTGAATAGCTAGTACTTTAGGAACTAAGAA
AAAGATCTTTTCAACCTGGTATGTAGCTCTGTCAAACACATCATCAGTATGGGGTAAACC (SEQ ID NO:107)
- 49741 CTCGGGGCTCTCTAAAAGCCACCTTCTGTGACAAGCATATACTAAGCATCTCAATCAAA
GCCAGTTCTCCCCTGTCCAGCCTCCCTCGAGTGCTGAATTGCAGAATATCCCATTTTTC
ATTGGATGATGGAAAACCCATTGTTTTCCAGTGGATTGTAAATTACTTCGGGGTAAATA
GGCTGTATATATTCTCAAATTTCCAGAGTATGTAAGTCACTTTTAGATTGAGATA
GATTTTGTTCCTGAATAGCTAGTACTTTAGGAACTAAGAAAAAGATCTTTTCAACCTG
[G,A]
TATGTAGCTCTGTCAAACACATCATCAGTATGGGGTAAACCTGTGTTCTCTGTGGGTGT
CATTACCATAGTAGTGTATTGTATCATTGACAGTGAATAGTGTGGGGTAGTGTCTTG
TGGTTTCAGCTGCCACTCTGACTGACTGCTTCCACTCCA (SEQ ID NO:108)
- 49840 ATCTTTTCAACCTGGTATGTAGCTCTGTCAAACACATCATCAGTATGGGGTAAACCTGTG
TTCTCTGTGGGTGTGATTACCATAGTAGTGTATTGTATCATTGACAGTGA
[A,G]
TAGTGTGGGGTAGTGTCTTGTGGTTTCAGCTGCCACTCTGACTGACTGCTTCCACTC
CAACATCTTCTCTTTATCTCAACACTGTAGGTCTACCTGTGACTGTGTGTTTTCAGCAT
CTCTGCTTGCATGACCCAGGAGTGCTTCCACTCAATATGGCCACCATGCATGGTCATCT
TTCTGCTACTCCCTGTCTCTGACCCTGCTCCAGCAACACAGACAGACACCCCTTCTCTT
TCTATATGTCATATGGTGGGAATGCCCTTTAGTACTTACTCAGGAGTAGTTCCTCTGG (SEQ ID NO:109)
- 50102 CATTACCATAGTAGTGTATTGTATCATTGACAGTGAATAGTGTGGGGTAGTGTCTTG
TGGTTTCAGCTGCCACTCTGACTGACTGCTTCCACTCCAACATCTTCTCTTTATCTC
AACACTGTAGGTCTACCTGTGACTGTGTGTTTTCAGCATCTCTGCTTGCATGACCCAGGA
GTGCTTCCACTCAATATGGCCACCATGCATGGTCATCTTCTGCTACTCCCTGTCTCCT
GACCCTGCTCCAGCAACACAGACAGACACCCCTTCTCTTTCTATATGTCATATGGTGGGG
[G,A]
ATGCCCTTTAGTACTTACTCAGGAGTTAGTTCTCTGGGAAGCCTTCTGTTCTAGTTTCC
TTTTGTACAGCACTTTCACATTGAATTCTGACGTTCTCTGACTTATCTGCTTTGTGAG
ACTGTGAGCTTCTTAGGCAGTAGTACTTGTATTCTTAGCACCTTGCCAGTGCCAGGA
AACCTTATTAAGTAAATGAAAAGACAGAACTGACAGACTGGAATTAGAGCTCAAGCTTG
CCTCAATCTCAAGCCATTAAGATGAAGGGGAGCCGGGCGTGGTGGCTCACGCCTCTAATC (SEQ ID NO:110)
- 50109 ATAGTAGTGTATTGTATCATTGACAGTGAATAGTGTGGGGTAGTGTCTTGTGGTTTC
AGCTGCCACTCTGACTGACTGCTTCCACTCCAACATCTTCTCTTTATCTCAACACTG
TAGGTCTACCTGTGACTGTGTGTTTTCAGCATCTCTGCTTGCATGACCCAGGAGTGCTC
CCTCAATATGGCCACCATGCATGGTCATCTTCTGCTACTCCCTGTCTCCTGACCTG
CTCCAGCAACACAGACAGACACCCCTTCTCTTTCTATATGTCATATGGTGGGAATGCCC
[C,G,T]
TTAGTACTTACTCAGGAGTTAGTTCTCTGGGAAGCCTTCTGTTCTAGTTTCTTTTGT
ACAGCACTTTCACATTGAATTCTGACGTTCTCTGACTTATCTGCTTTGTGAGACTGTGA
GCTTCTTAGGCAGTAGTACTTGTATTCTTAGCACCTTGCCAGTGCCAGGAAACCTT
ATTAAGTAAATGAAAAGACAGAACTGACAGACTGGAATTAGAGCTCAAGCTTGCCTCAAT
CTCAAGCCATTAAGATGAAGGGGAGCCGGGCGTGGTGGCTCACGCCTCTAATCCAGCAC (SEQ ID NO:111)
- 50747 CCAGCCTGGGCAACGTGGCAAAACCCATTTCTACAAAAAATATAAAATTAGTTGGACG
TGGGGGTGTGTGCCTGTACTCAGGATGCTGAGGTGGGAGGATCACTTGAGCTCGAGAGGC
AGAGGTTGCAGTGAGCTGGGATCACACCATTGCAATCTAGCCTGGGTGATAGAATGAGAC

FIGURE 3PP



CTTGTCTCAAAAAAAAAATAATAATAATAAGGGGAAGATAAGGATTGGAACAGAA
GGAGCAGCATGTGGACAGAAATGTAGGCACAAGAAGGCATCACTCACTGAAGAGACTGAA
[G,A]
GTGGTTCAGTGTGCCTCAAGACTGGTGGAGTGTGTTTCCGGAAAGATAATGATGAAAGAG
CTGGACAGATAAACAGGGGCCAAATGTAATAGGAGTCTGGATTTTATTCTGAATATGGTA
GGGGCTATTGTAGCATCTTATATAGGGAAGTGAATGAGTACATTACATTTAAGGAATA
TCAACCTGAAAAAAGAGTGGAGACATTGTTGGGGGAGAGTGAAGTAGACTAGAGGCAGGG
AGAATATTTAAATAATTGAGGTAAGAAATGATGAACACCAGTATAAGGTGATGTCTTTAA

(SEQ ID NO:112)

51272

TAGACTAGAGGCAGGGAGAATATTTAAATAATTGAGGTAAGAAATGATGAACACCAGTAT
AAGGTGATGTCTTTAAGGAATGGAGAAGGGAATGAACCTGAGAAATATTTTGGAAGTAGAA
TCAACAGAACTCACTGACTGACTGGATATGGAGGTGAGAAAGAGAAGAGTCAAGAAATGAT
ATTCTAATTTCTAACTTGAGTGAATGCAATCAAAGAGAATACAATATCAGGTTCCATTTT
GTGCATGCTGAGTTTGAGATGTGTGGGACATGTACAGGGAGCTGTCCAGTAAGCAATTGG
[G,A]
TATATCAGCTAGCCATTAAGAGAGAGATCTTTGATAGAGAGGTTGTTGCTGAGTTGAGCC
ATTGGAATGGGCAGGATCACTCAAGAAGAGCTTATAAATGAGAAGAATTCTAGGAATAAG
TCCAAAGGGAGAAGTAAAAAGAAGAACTTGCAAAGGACACTGAGAAGAAATAGCTCGAGG
GATGGGAGAAAATCCAGAGAGAGGGATGGCATAGGAGTCAGTGAAGGAAACGGTTTCAT
GGGGGTGAGTACTACTGGGTAGTGAATATAATAAGAATATCTTTTAGGATTTCTCAACCC

(SEQ ID NO:113)

52842

TCAGGGTGGTTTTGAGGGCTCAGTTAAGTCTCCTTTAGGAAGGTTGAGTCTGTAGCCTT
GGCAAGTTACTTAAAGTCTCTGTGACTATTACCTCATCTCTAAGATGGGGACTAAGCTTG
GTGACATAGTTTTACATACCAGGCACAGTGCCTGACTTTTTGGCTCTGTCTCTGAAGTCTT
CCCTTTGTATATGGTATGTTTCGGGGAATAGGAGCCTCAAGCACTTATCCTTTAAATATT
TATCCTCCATCAGTCACTAAACGTTTACTCTGTACTTTTGATAGGTGCTGTGGGGTCCA
[G,A]
GGTATAAAAGGTACCTTCAAAGTTACTGTTAAAGTGCAGGAAGGTTTTTAAGCAAATTAT
GTTTAATGATTTTGACAATCTGACATGCAGGAAAATTAATAGGGCCTATGCAGAAGAGGA
GTTTTATGTAACACTCTGTAGTTGAGGAAACAGAGCCCTTGAAGCAGTGATCTCTCTGG
GGAGGAATGTCTGGTATTGGAATCTCATGAAATGATAATACTTAATTTTTATCATG
AGCAGCAAAACACAGATTTGCTAGGAGAAAGTCATCGTATGTTGTTGCATTGGGCATTT

(SEQ ID NO:114)

61837

GAGGAACCTCCATGTCAATTTCCATAGTAAGTACCTTTTTGTTTTTAACATTTCTAT
CAATGTACACCAAGATTCCAATTTCTCCATGTCTCCTCCCAACACCATTAAAGTGGGGTGGT
GGTCTACTACTATTGCTGTGTGCTGTTTATTCCTCCCTCAGTCTGTAAAGTGTGCT
TCATATATTTAGGAGCTTAATATTAGGTCCATATGAAGTTATAATTTCTCCTGGTAAAG
TGACCCATTTATCATTATGTAATGTCCATCTTTGTCTCTGTGACAGTTTGTGTCTTAAA
[A,G]
TCTATTTTGTCTGATGTAATTATGGCCACCCCTTTTCTCTTTGGGTTCCCGTTTTTATGG
AATATCTTTTCCATCCTTTCACTTTGAGCTTATGTGTCTCTAGATCTAAAGTGAGTC
TCATAGATAAGGTATAGTTGATTCTGTATGTGTTATCACTCAGCAATTTATATCTTTTA
GTTAGGGGATTTAATCCATTTACATTTAAAGCAGTTACTGATAGGGAAGGACTTACTGTT
GTCATTTGGCTAGCTACCTTTTATCTTTGTCTGTGGCTTTTCTGTTTTTCCCTTCCTC

(SEQ ID NO:115)

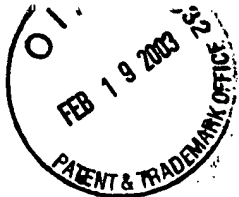
62018

CATATATTTAGGAGCTTAATATTAGGTCCATATGAAGTTATAATTTCTTCTGTTAAAGT
GACCCATTTATCATTATGTAATGTCCATCTTTGTCTCTGTGACAGTTTGTGTCTTAAAA
TCTATTTTGTCTGATGTAATTATGGCCACCCCTTTTCTCTTTGGGTTCCCGTTTTTATGG
AATATCTTTTCCATCCTTTCACTTTGAGCTTATGTGTCTCTAGATCTAAAGTGAGTC
TCATAGATAAGGTATAGTTGATTCTGTATGTGTTATCACTCAGCAATTTATATCTTTTA
[A,G]
TTAGGGGATTTAATCCATTTACATTTAAAGCAGTTACTGATAGGGAAGGACTTACTGTTG
TCATTTGGCTAGCTACCTTTTATCTTTGTCTGTGGCTTTTCTGTTTTTCCCTTCCTCT
CTTCTGGCTTCTTCTGTGTTTTGTTGATTTTTTTTTTTTGTAGTGATATGTTCTGAT
TCCCTTCTATTTCCCTTTGTGTGCATTCTATAGATGCTATTTTGTGGTTACCATTGCA
ACTACATAAAGCATACTAAAGTTATAGCAACTTATTTAAGCTGTTTACAACCTTAACCTC

(SEQ ID

NO:116)

FIGURE 3QQ



TECH CENTER 1600/2900

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RECEIVED

65562

GACTGAAATTGACACATGCAGTCTGATTCTAACCTCCTGTCTGCCAGCTCTGATCCA
GAACTTTGCATGACTGATACGGCTGATAGATTGTCTATGGCTGATAGACTGTCATTTCG
ACCTAAAAGTCTGATCATTTTACATCTGTTAGACATCTTGCAGCCTTTCCGGTGTGAGT
TCCAAAGTTGTTAGTGGGAATTTCAAAGCCTTTAATAATCTAGCCCCACTTTGTTCACTC
TCTGTGTAATAACCACATACAACAATTGGCTGCATCTCCATAGCACATGGTACTCCTCCC
[A,G]
TTGTCTTGGTTGTGCCAGCAACTGGTTTTCGCTTTCTCTTCTGCTTGTGAGGTCAT
TTCCAAGGCCAGGTCTTTGTGCTTTTCCCAAGCTTCCAGAGCTTCTTCATACTCCC
CTTACTTCTGAGATTTAACTGTTCTCTCTTCAAGCGCTTGTCTAGTAAGAAGGAGGCAGC
AGCAGCACTGTGGGTGGTGGAAAGTGTACCAGCTTTGGAGTCAGACCATTGGATCTCAG
CCCTACCATTTTCTACTTAGATTTTTTTAGGACAAATTTCTCCATCTTTCTAAGCCTCCA

(SEQ ID NO:117)

65780

TCTAGCCCCACTTTGTTCACTCTCTGTGTAATAACCACATACAACAATTGGCTGCATCTC
CATAGCACATGGTACTCCTCCCGTTGTCTTGGTTGTGCCAGCAACTGGTTTTCGCTTT
CTCTTCTGCTTGTGAGGTCAATTTCCAAGGCCAGGTCTTTGTGCTTTTCCCAAGCTT
CCCAGAGCTTCTTCATACTCCCTTACTTCTGAGATTTAACTGTTCTCTCTTCAAGCGC
TTGTCTAGTAAGAAGGAGGCAGCAGCACTGTGGGTGGTGGAAAGTGTACCAGCTTT
[G,A]
GAGTCAGACCATTGGATCTCAGCCCTACCATTTTCTACTTAGATTTTTTTAGGACAAAT
TCTCCATCTTTCTAAGCCTCCAATTGCTCACTTACAAAATTGATATAACATTTACCTTGC
AAGATTGGTATGGAAGTAATTAACCCAGTATTTAGAACATAGTAATTAATAAATAACTA
TTATTACCATCATTACTATAGTTAGGACACTCACTGTTAGGTGCTATACAAAGAGGATCA
TAAAGGGATGTTGTCTTGGGCTTCTTGAATAAATGTTGTCTTTACTGTATTTTAGA

(SEQ ID NO:118)

66092

TTGGATCTCAGCCCTACCATTTTCTACTTAGATTTTTTTAGGACAAATTTCTCCATCTTT
CTAAGCCTCCAATTGCTCACTTACAAAATTGATATAACATTTACCTTGCAAGATTGGTAT
GGAAGGTAATTAACCCAGTATTTAGAACATAGTAATTAATAAATAACTATTATTACCATC
ATTACTATAGTTAGGACACTCACTGTTAGGTGCTATACAAAGAGGATCATAAAAGGGATG
TTGTCTTGGGCTTCTTGAATAAATGTTGTCTTTTACTGTATTTTAGAATATCATTCTG
[G,A]
GTCATAATTGTTTGTGTGTCATAATAATGAAACATACTTGAATATTAATTAACCTCTTTT
TTTATTTTTTAGCCATGTTAGAAGGTTCCCCACAGCTGAATATGGTTGGCCTCTTTGAC
GAATTATTTCCAAAGAAGGAATACCAGGACTTTACAGAGGCATCACCCCAAACCTCATGA
AGGTGCTCCCTGCTGTAGGCATCAGTTATGTGGTTTATGAAAATATGAAGCAAACCTTAG
GAGTAACCCAGAAATGATGTTGCATTTTTTGTCTTAGCCTGATAATTGAAACTTTCAACA

(SEQ ID NO:119)

66617

ATGAAGCAAACCTTTAGGAGTAACCCAGAAATGATGTTGCATTTTTTGTCTTAGCCTGATA
ATTGAAACCTTTCAACAATCTCTGGAGTGACTTTTTCTCCTCGAATTGAAACAAGTCTATG
GCAAAAGAAGCTGCATTTTTTTTCACAAAAGGGAAGATGGTAACAATGGTCACTTCAAAC
TTTGGGCTAAATTATATGTACACAGAAATGTTCAAAATCATAGTTTAAATGTGTTTTGAA
AAGGCCACACAATTATACCTTTATCTTTCTTAATAATCCTGCAAATCTCTGCCCTGAATC
[C,T]
GAAATCTGAAAATGTACTGGCTTGAACAAAATTTGTTTTGTGTGTAGAGTTATAAATCA
TTAATCTTTATTTTGGGTGGTTTACGTTTATGCCAGTTCTTTATATTTAAATTTCTGT
TTTATATATTTTGAATGTCTTTATAGATTTCTTTAAATTTCTTTATAGAACCATTAAATAG
AAAATCATTACATTTAAATATACCTTACAGCAAAAGCATCCAAATAAGTATAGGGTTTA
TGTCCTTATTTTTCTTTCACTGAATACGAATGAGCACAGTGGTGGAATTTCTGAAGGGA

(SEQ ID NO:120)

66892

ATCCTGCAAATCTCTGCCCTGAATCCGAAATCTGAAAATGTACTGGCTTGAACAAAATTT
GTTTTGTGTGTAGAGTTATAAATCATTAACTTTATTTTGGGTGGTTTACGTTTATGCC
AGTTCCTTTATATTTAAATTTCTGTTTTATATATTTTGAATGTCTTTATAGATTTCTTT
AAATTTCTTTATAGAACCATTAAATAGAAAATCATTACATTTAAATATACCTTACAGCAA
AAGCATCCAAATAAGTATAGGGTTTATGTCCTATTTTTCTTTCACTGAATACGAATGA
[G,A]
CACAGTGGTGGAAATTTCTGAAGGGAAGTGATGAAATTATATTTATTTTCACTGGGCACTTT
TCCATTTTACCAGTGTACCATTATTTGGTTCCTGGAGTTATACACTAATTTTCACTATAT
TACTGTTAAATTACCAACACAAGGCAATTTATTTGAAAGATTCCGTTTATCCTGCCATTG
CTTTGAAAAGCAGCAGGAAACGAAATCCTTTGACTTGTATCAGCTTCTGCAGAGCATCTT

FIGURE 3RR



- 67263 TGTTCCTTTGTCCTTTGTTTCCTACCTTTTGAATCAGATTCCGTTTTAGTCAGGAAGA (SEQ ID NO:121)
- 67263 CACTGTACCATTATTTGGTTCTGGAGTTATACACTAATTTTCAGTATATTACTGTTAAA
TTACCAACACAAGGCAATTTATTTGAAAGATTCCGTTTATCCTGCCATTGCTTTGAAAAG
CAGCAGGAAACGAAATCCTTTGACTTGTATCAGCTTCTGCAGAGCATCTTTGTTTCCTT
TGTCTTTGTTTCCTACCTTTTGAATCAGATTCCGTTTATGTCAGGAAGACTTCTTGGA
CCATTCTTAGTAACCTGAAATTTCTTTTAAATTGCATGAAGTGGATTGATCATGAGCAA
[G,A]
TGATGTGCTTATTTCTCCCTCACTGTTGAATATCTTTGAACTTGCTGTTTTCAATATGGG
CAGCACAAGGTGAGAGATACATATTAATAGTAGTATGTATTACTCTTATACATTAGATA
CCTATATTTAAATGAAAGGCCCAATTTGTAAACATATACATTCATATTCTCTCTGCCCC
AAGTTTTAGGAACATGTTAGGATATAGGAGACTTAATTTATAATAATGAGAGCATTTTTT
TATTTTACTAAAGCCATTTTATAGTCAACTATCTTTCTTATTTGTGTGATTAGAAGCTT (SEQ ID NO:122)
- 67651 ATAGTAGTATGTATTACTCTTATACATTAGATACCTATATTTAAATGAAAGGCCCAATTT
GTAAACATATACATTCATATTCTCTCTTGCCCCAAGTTTTAGGAACATGTTAGGATATAG
GAGACTTAATTTATAATAATGAGAGCATTTTTTATTTTACTAAAGCCATTTTATAGTC
AACTATCTTTCTTATTTGTGTGATTAGAAGCTTAGAAAAATATTTACTAGTTGAAGTTAT
TATCAGTTTTTAATTTAGTTCTTAACTCATTTCACTTCTAATAATTTCTGTTATAAATT
[G,T]
CCAGCATTTTAAATGAAAATCTAATGATGTAATAGGCATTTTCTTTATTTGAACCTACCTC
TTTTATTTTCTGAACCAAGAGAAAGATGGACTGGTGTGTTGTGAAACATTTTAAAAATG
TAGTTTCATTTATATTAGTTATGTTTGATAAATGTCTCAGTATTTTATAATATGATAAG
CCTGGGATTCTACTTTTAGGGTTATTTGTACTTTTGAGTAATATATAAAGTGACAATATT
AAGGTACATGATCAGCTCTTTCTATTTTACTCGTAAAAATATGGAATGAATAATTTT (SEQ ID NO:123)
- 67935 ATTTCTGTTATAAATTGCCAGCATTTTAAATGAAAATCTAATGATGTAATAGGCATTTTCT
TTATTTGAACCTACCTCTTTTATTTTCTGAACCAAGAGAAAGATGGACTGGTGTGTTGTG
AAACATTTTTAAAAATGTAGTTTCATTTATATTAGTTATGTTTGATAAATGTCTCAGTAT
TTTTATAATATGATAAGCCTGGGATTCTACTTTTAGGGTTATTTGTACTTTTGAGTAATA
TATAAAGTGACAATATTAAGGTACATGATCAGCTCTTTCTATTTTACTCGTAAAAATTA
[C,T]
GGAAATGAATAATTTTGCTAACAACTTTGAAATTTCAAACCTCTGGAAAATATGAAAATA
TTCATTGTTTATTATGAATTTAAATTGTAAGGTATGAATGTGATTTGTCTGTACATCTTG
TATCTTTTCAAAAAATGATTCTGTATCTTTTGGAAAAAAGCCGAGAGTTGAAGATAGTA
TATTTCTGGTAGTACTGAATATTTACTTACAGTTTCTATCAAAAATATATATTTGTTTCT
AAAATTACTTGTTTCCAGTTTATTTTTTTAGAGAAAATCTTAAGTCTCAGTTTCC (SEQ ID NO:124)
- 69000 TTCAGAAATAACTTATCAGTTATTTCTGTAAGCTTCTTGCTTACCTGGATACCTGACAGG
TGAGATGGCTGTAGCAGACACTGGCAGTTCCCTGCCACACACCTGTCCCTGTCCACAGC
TGCACAAGGCAGCTCTGTGTGCAATTGCCAGCATCTGCTCCTCTGTTCTCAGGGAATCTT
TGTTAGAAAAATGCTGCCATATTTGTTTCTCACCTATTAGTCTTGTCTCCAGTCAAGAG
AATAAATTTATGCAAGCAGAGATTGTACTTTACAGTATTTTGTCTTTGAGCTTGGCATT
[T,G]
GTTGCATTTGTAAAAATGTGGCATGGCTTCTCATCCCCCAATAGGAACTTTGCCAGCCC
TTTTGTTCTCATGGAATTCCTTTTTTGAAGAGACCAAGGAGTAAAAATACTGTGG
AGGGAGCAACCCCTCCTTTGCCATATGCTCTCATTGGGAGACATGTGGAGCAGTCTGAAGT
CATTTAGGCCACTCTCTGGGAGAGCATCCTATGATGTTCTCCAGCCTAGCCCCCTTCC
ACTGTGCTCAAGTCCAAGCTGACCAGCTTCTGACCACAGTGTAACAAAGATGATTGTC (SEQ ID NO:125)
- 69134 CTGTGTGCAATTGCCAGCATCTGCTCCTCTGTTCTCAGGGAATCTTTGTTAGAAAAATGC
TGCCATATTTGTTTCTCACCTATTAGTCTTGTCTCCAGTCAAGAGAATAAATTTATGCA
AGCAGAGATTGTACTTTACAGTATTTTGTCTTTGAGCTTGGCATTAGGTTGCATTTGTAA
AAATGTGGCATGGCTTCTCATCCCCCAATAGGAACTTTGCCAGCCCTTTTGTCTCATG
GAACTTCTTTTTTGAAGAGACCAAGGAGTAAAAATACTGTGGAGGGAGCAACCCCT
[C,T]
CTTTGCCATATGCTCTCATTGGGAGACATGTGGAGCAGTCTGAAGTCATTTAGGCCACTC
TCTGGGAGAGCACATCCTATGATGTTCTCCAGCCTAGCCCCCTTCCACTGTGCTCAAGTC

FIGURE 3SS



Docket No.: CL001103

Serial No.: 09/777,921

Inventors: Gennady MERKULOV et al.

Title: ISOLATED HUMAN TRANSPORTER ...

CAAGCTGACCAGCTTTCTGACCACAGTGTAACAAAGATGATTGTCAGTGGGCCCCAGAA
TCCTATACCCAGA (SEQ ID NO:126)

FIGURE 3TT